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PROCEEDINGS

OF THE

LINNEAN SOCIETY OF LONDON.

November 3, 1864.

George Bentham, Esq., F.R.S., President, in the Chair.

Henry Stevenson, Esq., was elected a Fellow.

The following Papers were read, viz. :—

1. Letters from Sir Henry Barkly, K.C.B., Governor of the Mauritius, and Swinburne Ward, Esq., Civil Commissioner, in reply to the Memorial of the Linnean Society in March last, relative to the wanton destruction of the Double Cocoa-nut, *Lodoicea Seychellarum*. (See 'Botanical Proceedings,' vol. ix.)

2. "Observations on some Orchids of the South of France;" by John Treherne Moggridge, Esq. Communicated by the President. (See 'Botanical Proceedings,' vol. viii.)

3. "Notes on the Chatham Islands;" by Henry H. Travers, Esq. Communicated by W. T. L. Travers, Esq., F.L.S. (See 'Botanical Proceedings,' vol ix.)

4. "On the Genera *Sweetia*, Spreng., and *Glycine*, L., simultaneously published under the name of *Leptolobium*;" by George Bentham, Esq., Pres. L.S. (See 'Botanical Proceedings,' vol. viii.)

5. "A brief Account of the *Myrmica Kirbii* as found in Southern India;" by John Shortt, M.D., F.L.S. (See 'Zoological Proceedings,' vol viii.)

6. "Account of a Heronry, and Breeding-place of other Water-birds, in Southern India;" by the same. (See 'Zoological Proceedings,' vol. viii.)

November 17, 1864.

George Bentham, Esq., President, in the Chair.

The Hon. John Leicester Warren was elected a Fellow.

Dr. Hooker, V.P.L.S., laid before the Society a lithographed plate of a gigantic species of *Aristolochia*, from the forests of Old Calabar, where it was discovered by the Rev. W. Thomson, of the United Presbyterian Church Mission, and who had transmitted a flower in spirits to Kew. At Mr. Thomson's request, it had been named *A. Goldiana*, after the Rev. H. Goldie. Dr. Hooker hoped to make further observations on it at a future Meeting of the Society. (See Meeting of February 16, 1865.)

Dr. Hooker also exhibited some Hazel-nuts, said to have been taken from a closed cavity of a large oak-tree at Llanelly, in South Wales, and which were supposed to have lain there for many years. The nuts presented a curious striped appearance, and the kernels were quite sound and fleshy, though discoloured. They were sent to Dr. Hooker by Mr. J. Douglas, the proprietor of the saw-mills in which the tree was cut up.

The following Papers were read, viz.:—

1. "Facts relative to the movements of Insects on dry, polished, vertical surfaces;" by John Blackwall, Esq., F.L.S. (See 'Zoological Proceedings,' vol. viii.)

2. "Note on a Skeleton of *Dinornis robustus*, Owen, in the York Museum;" by Thomas Allis, Esq., F.L.S. (See 'Zoological Proceedings,' vol. viii.)

3. "Description of a huge Banyan-tree, *Ficus indica*, which occurs in the Chingleput District, and covers an area of about 4,800 square yards; the number of aërial roots which support the branches, and some of which descend from a height of 60 feet, amounting to about 2000;" by John Shortt, M.D., F.L.S.

4. "On *Pœciloneuron*, a new genus of *Ternstrœmiaceæ*;" by Capt. R. H. Beddome, Officiating Conservator of Forests, Madras. Communicated by Thomas Thomson, M.D., F.R.S. & L.S. (See 'Botanical Proceedings,' vol. viii.)

5. "On the Naturalized Weeds of British Caffraria;" by W. S. M. D'Urban, Esq., F.L.S. In a Letter to J. D. Hooker, M.D., V.P.L.S. (See 'Botanical Proceedings,' vol. viii.)

December 1, 1864.

George Bentham, Esq., President, in the Chair.

Henry Gibbs Dalton, M.D., was elected a Fellow.

The following Papers were read, viz.:—

1. "On new Tubicolous Annelides, in the Collection of the British Museum," part 2; by William Baird, M.D., F.L.S. (See 'Zoological Proceedings,' vol. viii.)

2. "On the Structure of *Bonatea speciosa*, L., with reference to its Fertilization;" by Robert Trimen, M. Ent. Soc. Communicated by Charles Darwin, Esq., F.R.S. & L.S.. (See 'Botanical Proceedings,' vol. ix.)

3. "Brief Notice of Results obtained by Experiments with *Entozoa*;" by T. S. Cobbold, M.D., F.R.S. & L.S. (See 'Zoological Proceedings,' vol viii.)

4. "On the free Nematoids, marine and freshwater, with descriptions of 100 species;" by H. C. Bastian, M.B., F.L.S. (See 'Transactions,' vol. xxv. part 2.)

December 15, 1864.

George Bentham, Esq., President, in the Chair.

Dr. St. Brody, F.L.S., exhibited specimens of the *Ammi glaucifolium*, L. (*A. majus*, γ *glaucifolium*, Gren. & Godr.), gathered

by him on the banks of the Severn, near Gloucester, in September last.

Dr. Short, F.L.S., exhibited four samples of Tea, manufactured from the leaves of Coffee; three of the samples prepared in the Chinese method; the fourth in the mode employed by the natives of Sumatra.

The following Papers were read, viz.:—

1. "On the Tsetse Fly of Tropical Africa (*Glossinia morsitans*, Westw.);" by John Kirk, M.D., F.L.S. (See 'Zoological Proceedings,' vol. viii.)

2. "Description of a new variety of *Lepidonotus cirratus*, parasitic in the tube of *Chætopterus insignis*;" by William Baird, M.D., F.L.S. (See 'Zoological Proceedings,' vol. viii.)

3. "List of Diurnal Lepidoptera, collected by Mr. Wallace in the Eastern Archipelago;" by W. C. Hewitson, Esq., F.L.S. (See 'Zoological Proceedings,' vol. viii.)

4. "On the *Lentibulariæ* collected in Angola by Dr. Welwitsch, A.L.S., with an Enumeration of the African species;" by Professor Oliver, F.R.S. & L.S. (See 'Botanical Proceedings,' vol. ix.)

5. "Notes upon a few of the plants collected, chiefly near Nagasaki, in Japan, and in the Islands of the Korean Archipelago, in the years 1862–63, by Richard Oldham, late Botanical Collector to the Royal Gardens, Kew;" by the same. (See 'Botanical Proceedings,' vol. ix.)

6. "On five new genera of West Tropical Africa, belonging to the Natural Orders *Bixineæ*, *Tiliaceæ*, and *Anonaceæ*; with a note upon the genera *Oncoba* and *Mayna*;" by the same. (See 'Botanical Proceedings,' vol. ix.)

7. "Note on the variety *Trimmeri* of *Potamogeton trichoides*, Cham., found in England;" by Robert Caspary, Prof. Bot., Königsberg, Prussia. Communicated by Dr. Hooker, V.P.L.S. (See 'Botanical Proceedings,' vol. viii.)

8. "Notice of two forms of *Eriophorum angustifolium*;" by

George Dickie, M.D., F.L.S., Prof. Bot., Aberdeen. (See 'Botanical Proceedings,' vol. ix.)

January 19, 1865.

George Bentham, Esq., President, in the Chair.

Archibald Campbell, M.D., Lieut.-Col. Henry Scott, R.E., and John Lindsay Stewart, M.D., were elected Fellows.

The following Papers were read, viz. :—

1. Extract of a Letter from W. H. Brewer, State Geologist to the Survey of California, "On the Forests of *Sequoia* (*Wellingtonia*) *gigantea*," addressed to Sir W. J. Hooker, F.R.S. & L.S. (See 'Botanical Proceedings,' vol. viii.)

2. "On *Musa Livingstoniana*, a new Banana from Tropical Africa;" by John Kirk, M.D., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

3. "On the Anatomy of *Doridopsis*, a genus of the Nudibranchiate Mollusca;" by Albany Hancock, Esq., F.L.S. (See 'Transactions,' vol. xxv. part 2.)

February 2, 1865.

George Bentham, Esq., President, in the Chair.

The Rev. Robert Whitaker M'All, and Captain Douglas Galton, R.E., were elected Fellows.

The following Papers were read, viz. :—

1. "On the Movements and Habits of Climbing Plants;" by Charles Darwin, Esq., F.R.S. & L.S. (See 'Botanical Proceedings,' vol. ix.)

2. "Note on the Genera *Darwinia*, Rudge, and *Bartlingia*, Ad. Brongn.;" by George Bentham, Esq., Pres. L.S. (See 'Botanical Proceedings,' vol. ix.)

February 16, 1865.

George Bentham, Esq., President, in the Chair.

The following Papers were read, viz. :—

1. "Notes on *Pueraria*, DC., correctly referred by the author to *Phaseoleæ*;" by George Bentham, Esq., Pres. L.S. (See 'Botanical Proceedings,' vol. ix.)

2. "Notice of some Vegetable Monstrosities;" by George Dickie, A.M., M.D., F.L.S., &c. (See 'Botanical Proceedings,' vol. ix.)

3. "Note of Observations and Experiments on Germination;" by the same. (See 'Botanical Proceedings,' vol. ix.)

4. "Descriptions of some new and remarkable species of *Aristolochia* from Western Tropical Africa;" by J. D. Hooker, M.D., F.R.S., V.P.L.S. (See 'Transactions,' vol. xxv. part 2.)

5. "The *Diatomaceæ* of Otago, New Zealand;" by W. Lauder Lindsay, M.D., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

March 2, 1865.

George Bentham, Esq., President, in the Chair.

Balthazar Walter Foster, M.D., and John Jenner Weir, Esq., were elected Fellows.

The following Papers were read, viz. :—

1. "On the Surface-fauna of Mid-ocean.—No. 1. *Polycistina* and allied Rhizopods;" by Major Samuel R. J. Owen, H.M. Bengal Army. Communicated by Dr. Baird, F.L.S. (See 'Zoological Proceedings,' vol. viii.)

2. "On a new Dye-wood of the genus *Cudranea*, from East Tropical Africa;" by John Kirk, M.D., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

3. Letter from Mr. C. A. Wilson, containing Observations on the Natural History of South Australia; including a numerous

List of Birds from the Northern parts of the Province. Communicated by the Secretary.

March 16, 1865.

George Bentham, Esq., President, in the Chair.

Isaac Anderson Henry, Esq., Joseph William Morris, Esq., and Edwin Morritt Williams, Esq., were elected Fellows.

The President announced that tidings had been received of the Death of Heinrich Schott, Director of the Imperial Garden at Schönbrunn, who had been proposed as a Foreign Member on the 2nd of February.

The following Papers were read, viz.:—

1. "Notes on Lichens collected by Sir John Richardson in Arctic America;" by the Rev. William Allport Leighton, B.A., F.B.S.E. Communicated by J. D. Hooker, M.D., F.R.S., V.P.L.S. (See 'Botanical Proceedings,' vol. ix.)

2. "Palms of East Tropical Africa;" by John Kirk, M.D., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

3. "Descriptive List of Plants of the Anamallay Hills, in the Madras Peninsula;" by Captain R. H. Beddome, Officiating Superintendent of Forests. Communicated by Thomas Thomson, M.D., F.R.S. & L.S. (See 'Transactions,' vol. xxv. part 2.)

April 6, 1865.

George Bentham, Esq., President, in the Chair.

Thomas W. V. Beckett, Esq., Captain Samuel Richard John Owen, Richard Milne Redhead, Esq., and Captain Willoughby Sandilands Rooke, were elected Fellows.

The following Papers were read, viz.:—

1. "Notes on the Flora of the Desert of Sinai;" by R. M. Redhead, Esq., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

2. "On the Vegetation of the Western and Southern Shores of the Dead Sea;" by B. T. Lowne, Esq. Communicated by J. D. Hooker, M.D., F.R.S., V.P.L.S. (See 'Botanical Proceedings,' vol. ix.)

April 20, 1865.

George Bentham, Esq., President, in the Chair.

The following Papers were read, viz.:—

1. "On *Gripidea*, a new Genus of the *Loasaceæ*; with an account of some peculiarities in the Structure of the Seeds in that Family;" by John Miers, Esq., F.R.S. & L.S. (See "Transactions,' vol. xxv. part 2.)

2. "Lahul, its Flora, Vegetable Products, &c., from communications received from the Rev. H. Jaeschke, of the Moravian Mission;" by E. T. Aitchison, M.D., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

May 4, 1865.

George Bentham, Esq., President, in the Chair.

Frederick Welwitsch, M.D., and William Woolls, Esq., were elected Fellows.

Mr. Redhead, F.L.S., exhibited dried specimens of Plants collected in Palestine and the Desert of Sinai; also specimens of the "Rose of Jericho" (*Anastatica hierochontica*), living and in the dried state.

The following Papers were read, viz.:—

1. "On two species of *Guttiferæ*, *Calysaccion siamense*, Mig., and a *Garcinia* from the East Coast of Africa;" by Thomas Anderson, M.D., F.L.S.

2. "Descriptions of some new Genera and Species of Tropical *Leguminosæ*;" by George Bentham, Esq., F.R.S., Pres. L.S. (See 'Transactions,' vol. xxv. part 2.)

The President announced that a new part of the 'Transactions' (vol. xxv. part 1), consisting of Mr. Wallace's Paper "On the Phenomena of Variation and Geographical Distribution, as illustrated by the *Papilionidæ* of the Malayan Region," was now ready for distribution.

May 24, 1865.

Anniversary Meeting.

George Bentham, Esq., President, in the Chair.

This day, the Anniversary of the Birth of Linnæus, and the day appointed by the Charter for the Election of Council and Officers, the President opened the business of the Meeting with the following Address:—

Gentlemen,

In laying before you the annual statement of our progress, we have not had to report to you that addition to our funded property which had of late years become usual; for several important papers requiring expensive illustrations had been read at your meetings, the publication of which the Council considered that they ought not to delay, although entailing more than double the usual outlay on this head. They accordingly suspended the investments, which in the preceding year had been exceptionally large, and after having published at the usual period a part of the Transactions of unprecedented extent, they have now issued an extra part devoted to Mr. Wallace's valuable paper on variation and distribution of species, as illustrated by the Papilionidæ of the Eastern Archipelago; and the materials already in hand for the usual issue next November show that our publications for the new year will be fully up to the ordinary average. I am happy to be able to add that our labours in this direction have been so well appreciated in distant lands, that they have procured for us considerable additions to our numbers amongst working naturalists

in our colonies and dependencies, especially in Australia, New Zealand, and East India.

Our Library has received the usual additions; the works presented have been numerous and important, and a sum of about £75 has been laid out in the purchase and binding of books. I last year mentioned that the Council were taking measures for printing a general Catalogue. This work, necessarily slow on account of the minutiæ of detail requiring careful attention to secure accuracy, is now progressing; the whole has been arranged and written out for press; it is in type as far as the letter G, and we trust that it will be ready for publication early in autumn.

In looking over this Catalogue and the shelves of our library, it will be observed that a large proportionate space is occupied by Transactions of scientific bodies and scientific journals more or less devoted to Natural History. This is, however, a class of works of which we consider it essential for a Society like ours to make as complete a collection as possible. Occupying much room in the shelves, and only wanted for occasional consultation, they are out of the reach of most private libraries, and yet every working naturalist must feel how essential it is for him that there should be some deposit where he can have ready access to them when these occasions occur. The Council have therefore always felt it to be in the interest of the Society to be liberal in accepting the proffered intercourse with such of the principal scientific bodies abroad as really include Zoology and Botany in the subjects they treat of; and the practical value of the works so obtained will now be much enhanced by the important indexes preparing by the Royal Society. The Linnean Society are in direct exchange of Transactions or Proceedings with no less than eighty-three Academies, Institutes, or Societies at home and abroad, and are in regular receipt, by purchase, exchange, or presentation, of sixteen zoological or botanical periodicals. The comparative value of these works to our Fellows is of course much varied. Few only are devoted exclusively to our own sciences, and in many cases the natural-history papers are so widely scattered in the mass of physical or mathematical subjects, or even of historical and general literature, that they are apt to be entirely overlooked. They are written, moreover, in fourteen different languages, which it can hardly be expected that we should all of us learn, even so far as to spell out with the help of a dictionary. Besides the conventional Latin, the English, French, and German are indeed now essential languages for every true scientific naturalist. With the help of

Latin and French, Italian and Spanish may be made out sufficiently for our purpose. A general study even of Portuguese and Dutch may, in some branches of our science, be repaid by the materials it would bring to our use. But we may surely be justified in concluding that papers written in Danish, Swedish, Russian, Bohemian, and Hungarian are intended for the sole use of the inhabitants of those countries, and that the general naturalist need to take no notice of them, unless the technical characters at least are in Latin. We have none yet, I believe, in modern Greek or in Turkish; but the time may not be distant when projects of learned Societies at Athens and Constantinople may be realized, and we may have Transactions, even in those languages, offered in exchange for our own.

My attention having thus been called to this class of works, it has appeared to me that a few notes on the subject might not be unacceptable to such of our Fellows as have occasion to consult our library, and might assist in that general survey of the progress of our science to which I am always desirous that my annual addresses should contribute. For this purpose I shall endeavour to pass in review the most important Natural-History Transactions and Journals now publishing, taking the different nations rather according to languages than in a strict geographical or political order. Commencing, therefore, with the Scandinavian, *i. e.* the Danish, Norwegian, and Swedish Academies and Societies, and proceeding with the East European, *i. e.* the Russian, Polish, Bohemian, and Hungarian, I shall then take the Italian, the Spanish, and those of the transmarine states or colonies, making use of their language, the Portuguese and Brazilian, the Dutch, and those of their colonies, the German and the French, concluding with our own and those of the transmarine countries once or still our colonies, who have retained or adopted our language. In this review, however, I have no pretension to giving any complete bibliography, but have confined myself, with few exceptions, to our own and the Royal Society's libraries at Burlington House, and to those works only where Zoological or Botanical papers would naturally be sought for, without seeking even for any stray ones which may have found their way into the Transactions of Medical, Agricultural, or other allied institutions.

1. Denmark.

The early publications of the Copenhagen Academy of Literature and Science contain but very few papers on Natural History;

but in 1790 was commenced a series of Transactions, either of the Natural History Society or of the Natural History and Mathematical Branch of the Royal Danish Society of Science, which, under various titles, has been continued to the present day, comprising many important papers which we have frequently to consult, chiefly on plants, insects, and the lower orders of animals. The first set was in 8vo, and appears to have been the work of a body distinct from the Royal Danish Society, being entitled Skrivter af Naturhistorie Selskabet. Five volumes were regularly published up to 1799, after which it was much interrupted. The last part of the fifth volume appeared in 1802, and in 1810 it was closed with a thin volume and general index. The chief writers in the six volumes were the great Danish Naturalists of the day—Vahl, Abildgaard, Spengler, Fabricius, Lund, Rathke, Schumacher, Schousboe, and Holten—besides Thunberg, who distributed his papers to most of the Societies of Northern Europe. As this Society expired, a few papers of the kind were laid before the Royal Danish Society, in whose second series of Transactions, entitled Det Kongelige Danske Videnskabernes Selskabs Skrivter, six vols. 4to, from 1800 to 1818, we have various papers by Fabricius on Greenland Zoology, by Schousboe on the Zoology and Botany of Morocco, and Rafn's Researches on the Vital Powers in Organic Nature, mixed in with a great variety of other sciences. In 1824 they separated Physical, Mathematical, and Natural Science from History and Literature; and in the 12 volumes from that year to 1846, entitled Det Kongelige Danske Videnskabernes Selskabs Naturvidenskabelige og Mathematiske Afhandlingar, are contained Schumacher's description of Thonning's Guinea plants, occupying the half of two volumes, and some zoological papers by Fabricius, Hornemann, Reinhardt, Kröyer, Œrsted, &c., including much relating to Greenland Zoology, besides Eschricht's contributions to Zoological Anatomy and Lund's series of papers on the Zoology and Vegetation of Brazil. A new series, under the title of Det Kongelige Danske Videnskabernes Selskabs Skrifter, femte række (5th series), was commenced in 1849, and is, I believe, still carried on, although the last volume received (the fifth) is dated as far back as 1861. The principal zoological contributions are from Eschricht, Steenstrup, Prosch, Bergh, Kröyer, J. Reinhardt, Luetken, and Meinert. In Botany we have only Schouw's geographical distribution of Italian Oaks and Birches; Liebmann's Mexican Ferns, Cyperaceæ, *Phileteria*, and Urticaceæ, and Œrsted's Central American Gesneriaceæ. This last

series is exceedingly well got up as to typographical execution; and the plates, which are numerous, are fully equal to the best of European illustrations in point of neatness and clearness of detail. Unfortunately the majority of the papers are in Danish, at least as to general matter, observations, and explanations; and in some cases that language is used even for generic and specific characters, rendering them useless to the majority of naturalists until they shall be translated into Latin by German compilers. There is also some confusion in referring to the Transactions, owing to the different series being distinguished only by slight alterations in the wording of the titles—further increased by the frequent custom in general systematic works of translating into Latin the titles of the works quoted.

These quarto Transactions appear now to be partially superseded by octavo Proceedings, commenced in 1842, as Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandelingar, and continued in a thin annual volume to 1863, the last received. At first these Proceedings only contained the Reports of the Meetings, and very short communications on Antiquities, Meteorology, Mathematics, &c., with a little Natural History: latterly papers of this class have been rather more extended, and a few plates given; the last part, for instance, for 1863, contains one plate illustrating Œrsted's paper on a *Neea* supplying tea in Central America, one with Reinhardt's paper on Rachiodontidæ, and another, as well as several woodcuts, with Steenstrup's Pleuronectides.

An octavo Journal of Natural History had also been started in Copenhagen by Kröyer, under the title of Naturhistorisk Tidskrift; four volumes in 8vo, from 1837 to 1843, completed a first series, and two volumes formed a second series from 1844 to 1849, with a satisfactory index to each series. The papers are chiefly zoological, many of them Kröyer's own, on Crustacea and Fish, the others mostly on Mollusca, Insects, and other lower orders, or relating to the Danish Fauna; the botanical papers are very few, and only on the Danish Flora. This Journal was renewed in 1861 by Professor Schiödte under the title of Naturhistorisk Tidskrift stifel af Henrik Kröyer, adgivel af Prof. S. C. Schiödte, and is now in its third volume. It is illustrated with beautiful plates, and contains, amongst others, valuable entomological papers by Schiödte and by Kröyer, on Serpulidæ by O. Mörch, and on the Anatomy of Nudibranchiate Mollusca by Berg.

To Danish Transactions must be referred also those of the Norwegian Societies of CHRISTIANIA and DRONTHEIM, all written in Danish, and printed for the most part at Copenhagen. These are the Trondjemiske Selskabs, afterwards Kongelige Norske Videnskabers Selskabs Skrivter, 5 vols. from 1761 to 1774; the Nye Sammling of the same, 7 vols., from 1784 to 1799, and two other series from 1817 to 1832, and from 1832 to 1846, the earlier ones with a few papers on Norwegian Zoology and Botany, very rare, or none at all in the later ones; the Magazin for Naturvidenskaberne, edited at Christiania, at first by G. F. Lundh, C. Hansteen, and H. H. Maschmann, afterwards by the Physiographiske Forening i Christiania, extends to ten thin volumes, octavo, 1823 to 1828, with a second series of two volumes, 1831 to 1836; the Nyt Magazin for Naturvidenskaberne udgives af den Physiographiske Forening i Christiania, in 9 vols. 8vo, without plates, closing in 1856, a work devoted to Natural History, but the papers relate almost exclusively to that of Norway and chiefly to its Geology; and lastly, the Annual Reports of the Norwegian University, entitled Kongelige Norske Frederiks Universitets Aarsberetning from 1856 to 1859. Much information is contained in these collections which might be useful to us as relating to a country so nearly connected in a physiological point of view with our own; but it is only those who are very familiar with the language who could find it worth while to seek for it amongst the mass of irrelevant matter with which it is mixed.

The Tidskrift for Naturvidenskaberne, edited at COPENHAGEN by H. C. Örstedt, J. W. Hornemann, and J. Reinhardt, in five volumes octavo, from 1822 to 1828, contains but very little Zoology and Botany, and that chiefly local.

The Videnskabelige Meddelelser fra den Naturhistoriske Forening i Kjöbenhavn, or Scientific Contributions of the Natural History Society of Copenhagen, published in parts in 8vo, with a few plates, appears to form annual volumes devoted to Zoology as well as to Botany. I have only seen a few Numbers, in which are contained botanical papers chiefly on the Central American Flora, by Œrsted, and extending from 1849 to 1863. There is no complete set in our libraries.

II. SWEDEN.

The Royal Society of Sciences of UPSALA appears to have been established in 1710, but to have published very little until 1744, when, chiefly under the influence of Linnæus, the Acta Regiæ Socie-

tatis Scientiarum was commenced in 4to, interrupted in 1751, resumed in 1773 under the title of Nova Acta Regiæ Societatis Scientiarum; and a new series commenced in 1851 is still continued. The early volumes were few and frequently interrupted, containing, amidst a great number of physical, historical, and mathematical papers, a few on Natural History by Linnæus, De Geer, and others; and towards the close of last century, and in the first years of the present one, there are numerous papers of Thunberg's, and a few from Swartz, Sparmann, Œdmann, J. E. Smith, Wahlenberg, and Forsberg. After the death of Thunberg to the close of the series in 1850, there are no more zoological papers, and very few botanical ones, chiefly bryological by Ångström, phycological by Areschoug, and by Fries on *Hieracium*. The 11th volume, however (1839), contains, under the name of Loca Parallela Plantarum, an interesting review by Lestadius, a Lapland Pastor, of the variations of species attributable in those northern regions to local circumstances. The recent volumes forming the new series since 1851 comprise, in Zoology, papers by Liljeborg on Crustacea, Thorell on Araneæ, Smitt on the Ephippies des Daphnies, and Stål on Chrysomelides; and in Botany, Areschoug on Phyceæ, Fries on Fungi, Lichens, and others, Anderson on Andropogoneæ, and a Monograph of Fumarias by Hammer. These Transactions have the advantage of being written entirely in Latin and French, and the plates illustrating them are generally well executed.

The long series of Transactions of the Stockholm Academy, known by the Latin name of Acta Academiæ Holmensis, but to which I only find the Swedish title of Kongliga Svenska Vetenskaps Akademiens Handlingar, are in 8vo, a thin volume having appeared almost every year from 1744 to 1854, with a fair proportion of Natural History, considering the great variety of sciences admitted. Taking the volumes since 1850, the zoological papers are chiefly entomological by Dahlbom, Naumann, Boheman, Zeller, Holmgren, C. Thomson, Stenhammer, &c., with some by Liljeborg on Crustacea and on Norwegian Zoology generally; the botanical ones comprise Anderson's Galapagos Flora and Indian Salices, Wallmar on Characeæ, a little-known enumeration of the plants of Portobello, in Panama, with descriptions of many new species by Beurling, under the title of Primitiæ Floræ Portobellensis, and Hartmann's notes on the Scandinavian plants of the Linnean Herbarium, made in our library, and which it would be of importance for us to have in English.

In 1855 the form was changed, and a new series commenced

under the title of Kongliga Svenska Vetenskaps Akademiens Handlingar, Ny Följd (new series), of which the last received is a part of the 4th volume, dated 1862. The typographical execution and illustrations in these volumes are good; a separate paging is adopted for each memoir, as in several of the most recent Transactions of other countries. The Natural History is chiefly zoological: Sundevall on the development of Fish-spawn, on the birds of the Carlson Museum, and of Vaillant's Oiseaux d'Afrique, on Aristotle's Animals, on Insect Anatomy; Holmgren on Swedish Tryphonidæ, Ophionidæ, and Ichneumonidæ; Wallengren on Scandinavian Alucita, and on Wahlberg's South African diurnal Lepidoptera; Stål on Brazilian Hemiptera, Bruzelius on Scandinavian Amphipoda, Thorell on Crustacea parasitic in Ascidia, and Grill's account of Victorin's zoological discoveries in South Africa. The only botanical paper is by the younger Agardh, on the position of the Ovule in Phanerogams.

The publication of octavo Proceedings by the same Society, in thinner and more frequent parts, commenced for 1844, and the last Numbers we have received are those for 1862. They are entitled Œfversigt af Kongl. Vetenskaps Akademiens Forhandlingar; they comprise minutes of meetings, abstracts of papers, and entire short papers with occasional illustrations, the physical, mathematical, and Natural-History subjects following each other without order. In the first volumes the papers were, in the table of contents, classed according to subjects; but after 1854 even that help to consultation was given up. The Natural-History papers relate chiefly to the Fauna and Flora of Sweden, with a few new general ones on Entomology and the lower orders of plants, besides those descriptive of the zoological results of Wahlberg's South African Expedition, and the Zoology and Botany of Malmgren's Spitzbergen collections. There is also an account, of some interest to ourselves as the chief possessors of Linnean treasures, of a good set of specimens of Lapland plants, types of the Flora Lapponica, named and laid down by Linnæus, and presented to Burmann, in whose herbarium, in Delessert's Museum in Paris, it now remains in good condition. The Plates in these Proceedings increase in number in the later volumes; in that for 1862, for instance, there are eight, illustrating Widegren's Memoir on Swedish Salmonidæ.

The detailed Annual Reports on the Progress of Science, undertaken by the officers of the Academy, were carried out with great pains and perseverance for many years, and would have been

extremely useful had they been drawn up in any language of extensive circulation. They were commenced in 1821, for the year 1820, under the title of Årsberättelsen om Vedenskapernes Framsteg afgivne af Kongl. Vetenskaps Akademiens Embetsmän, under the four different heads of Chemistry and Physics, Astronomy and Mathematics, Zoology, and Botany. Zoology by Dalman, and afterwards by Sundevall, and in the later volumes subdivided between Sundevall, Boheman, and Lovén, was continued for thirty-five years, ceasing in 1855 and 1856. Botany by Wikström was carried on till the close of his life in 1849, and an excellent index up to 1838 added by Anderson. These botanical reports were generally translated into German by Beilschmid; but some time naturally elapsed before the translations appeared, and the reports were too wordy to retain their interest when old. They appear now to have been entirely given up. The plan is an excellent one, and has since been carried out for Zoology as mentioned below in Wiegmann's Archiv, in a more suitable language. The great drawback, indeed, to the whole of the scientific publications of the Stockholm Academy is the use of a language limited for general purposes to a moiety of the Scandinavian Peninsula, and totally unknown to the great majority of the scientific world. Linnæus himself was accustomed to give in Latin whatever he considered to be of more than local interest.

The Royal Society of Science and Literature of Göteborg, after having published a few thin octavo parts of old Transactions, commenced a new series in 1808, which extended to five thin parts in small octavo, 1808 to 1822, under the title of Nya Handlingar af Kongl. Wettenskaps och Witterhets Samhället i Göteborg, containing, amongst a few others, several papers on the Fishes of the Bohusland with coloured plates. Again, in 1850, the present series was commenced in octavo, with much-improved typography, entitled Göteborg's Kongl. Vetenskaps och Vitterhets Samhälles Handlingar, Ny Tidsföld. It extends to eight thin volumes, the last dated 1863, and comprises, amidst Literature, Physics, &c., several papers on the Swedish Fauna, especially Fish, Insects, and Mollusca, but very little Botany.

Of the Physiographiska Sällskapets Tidskrift, 8vo, Lund, I have only seen a first volume, dated 1837–38, containing a paper of some length on East-Indian Birds by Sundevall, besides short papers on the local fauna and flora, mathematical and other subjects.

The Finland Society of Science at Helsingfors, although

politically in the Russian dominions, may be mentioned here as using the Swedish language. Of their Transactions there are in the library of the Royal Society four volumes in 4to (one a double one), from 1840 to 1856, under the title of Acta Societatis Scientarium Fenniæ. They contain, besides contributions to local Natural History, papers by Vahlberg on Brazilian Coleoptera, by Ilman on Adriatic Medusæ, and a monograph of *Eriophorum* by Nylander. There is also a Finnish Society, which has published a few octavo volumes of Transactions limited to the Fauna and Flora of Finland.

III. Russia.

The Transactions of the Academy of Sciences of St. Petersburg commenced in the year 1726, in 4to, as Commentarii Academiæ Imperialis Scientiarum Petropolitanæ. Fourteen volumes appeared up to 1746, when the title was changed to Novi Commentarii, and continued through twenty volumes to 1775. A third series, entitled Acta Petropolitana, in twelve parts, brought them down to 1782; a fourth, as Nova Acta Petropolitana, from 1783 to 1802, in fifteen volumes; and a fifth, in ten volumes, from 1803 to 1822, as Mémoires de l'Académie Impériale des Sciences de St. Pétersbourg, the general title still retained for the publications of the Academy. In 1830, however, in commencing the sixth series, the Sciences Mathématiques, Physiques et Naturelles were separated from historical and literary matter; and, besides that, a distinct series of volumes was commenced for Mémoires présentés par divers Savans, not members of the Academy. Every year also a thin volume was published, entitled Recueil des Actes de la Séance publique de l'Académie, held usually in December, containing the minutes of the Anniversary meeting, a report on the progress of science by the Secretary, and occasionally some scientific paper by way of Appendix. The part for 1831 includes a detailed enumeration and general *résumé* in German, by Brandt, of all the zoological papers contained in the seventy-two volumes of the Transactions up to that date, and that for 1834 a review by Bongard of all that had been done up to that time in Russia in Botany.

This sixth series lasted till 1859, but with various modifications. In the first two volumes (1830–33) Physics and Mathematics were mixed with Natural Sciences. In the following year the latter were separated; and soon after, a separate paging was adopted for Zoology and Botany. The eight volumes concluding

in 1859 are more than two-thirds zoological, chiefly by Brandt, Ménétriés, Parrot, and Middendorf, including Baer's Illustrations of Human Craniology,—the botanical portion consisting chiefly of well-known papers by Trinius, Bongard, Ruprecht, and C. A. Meyer. The nine volumes of the Mémoires des Savans Étrangers, from 1830 to 1859, with a good proportion of mathematical and physical sciences, comprise extensive contributions on insects by Count Mannerheim, Nordman, Motchoulsky, and Faldermann; on Crustacea and Mollusca by Seb. Fischer and Gerstfeld; on Fish by Girgensohn, and on Chilian Birds by Kittlitz; besides anatomical and others connected with zoology by W. Gruber and Baer. In Botany they contain Meyer on Cyperaceæ, Bunge on Chinese Plants, Fritsche on Pollen, Besser's *Artemisias*, Basiner's *Hedysarum*, Schleiden's Anatomy of Cacti, and Maximovitsch's Flora of the Amur.

From 1859 a new plan has been adopted. The memoirs have each a separate paging and title, and are separately sold, and for those who prefer keeping the whole together, they are arranged in volumes in the order of publication, without reference to subjects, each volume having its title-page and table of contents. Up to the present time the Natural-History papers have been chiefly geological or on human physiology; those on zoology and botany make up two or three volumes, and consist of the following:—in Botany, Regel on Parthenogenesis, and on the Flora of the Ussuri; Borszczow (or Borshtshoff) on Calligoneæ, and on the Aralo-Caspian Pharmaceutical Ferulaceæ; and Bunge's Revision of Anabaseæ; in Zoology, Paulsen on the Anatomy of *Diplozoon paradoxum*, Strauch on Algerian Erpetology, Weiss on the Oology of Rotatoria, Volborth on some Russian Trilobites, Morawitz's Contributions to the Coleopteral Fauna of the Island of Jesso, Ossiannikof on the structure of the cerebral ganglions in Crustacea, Knoch on the Tapeworm, and Strauch on the Tortoises of the Academy's Museum.

These Transactions are generally well got up; the plates are good, but sometimes, compared to the Danish and Parisian ones, rather coarse, or on too large a scale. The languages allowed are Russian, Latin, French, and German. Fortunately the Russian papers are confined to national, ethnological, or historical subjects, or that language is at most allowed to intrude into the habitats and stations in the descriptive papers. The great majority are in German or French, with Latin technical characters.

The Imperial Academy has, like many others, responded to the

general demand in the present day for reports of their proceedings; but they have adopted the inconvenient large quarto form, which for this purpose is quite unnecessary. They publish a Bulletin de l'Académie Impériale des Sciences de St. Pétersbourg, commencing from 1859, and forming each year a volume of six to ten Numbers. It contains the reports of proceedings, together with short papers complete, and a few plates. All sciences are necessarily mixed in this Bulletin, and several contributions are in the Russian language; but the zoological and botanical are, as in the Transactions, chiefly in French or German, with Latin technical characters. The most important are, in Zoology, Baer's papers on palæontological subjects; Entomology by Motchoulsky, Bremer, and Morawitz, Grube on Araneids, Schenck on Mollusca, and Strauch on two new Saurian Reptiles; and in Botany, Maximowitsch on *Golowninia*, Fritzsche on the Seeds of *Peganum*, Ruprecht on Caucasian *Primulas*, and Bunge on *Echinops*.

The Entomological Society of St. Petersburg have published two parts in large octavo with plates, forming together a thin volume of a work entitled Horæ Societatis Entomologicæ Rossicæ, the first part having appeared in 1861, the second in 1863. The papers are of course exclusively entomological, and are drawn up in French, German, Latin, and Russ.

The Société Impériale des Naturalistes de Moscou was founded in 1805, and soon after commenced publishing quarto memoirs with plates, on Zoology, Botany, Mineralogy, and kindred sciences. Four volumes had been issued at the time of the catastrophe of 1812, which destroyed the whole unsold stock, including the greatest part of the impression of the fourth volume, and all that was ready of the fifth; the latter volume, however, was reprinted after the peace, with funds contributed by two brothers, Chevaliers Zosima, and a sixth volume appeared in 1823. In 1829 a new series was commenced, entitled Nouveaux Mémoires, of which there are thirteen volumes from that year to 1861. Besides a few chemical, physical, and geological contributions, the papers are chiefly on the fauna and flora of the Russian dominions. The most important on exotic subjects are on insects, or the lower orders of animals—Eichwald on the Algerine and Atlas faunas, Basilewitz on North Chinese fish, Buhse's Transcaucasian plants, Regel's Monograph of Betulaceæ, and Körnicke's of Marantiaceæ. Of these memoirs there is not quite a complete set at Burlington House. The Royal Society have the first four volumes, the Linnean have the fifth of the first set, and of the second set the third

and fourth are in both libraries; from the seventh to the last issued (part of the thirteenth, 1861), in the Linnean only.

With the Nouveaux Mémoires the Society commenced in 1829 an octavo Bulletin, destined for reports of proceedings and short papers not requiring quarto illustrations; and this has continued to the present time, gradually increasing in the length of papers and consequent bulk, with the occasional addition of a very few plates. Up to the fifteenth volume (1842) one volume a year was published; since that two parts have appeared for each year, each one forming a fair-sized volume, with a separate paging, the last received being the first of the volume for 1864. This long series, with a fair proportion of Geology and Physics, comprises much that is valuable on the fauna and flora of the vast Russian empire, including its recent acquisitions on the lower Amur, and occasionally short general monographs or descriptions of exotic productions. Taking the last three years, we have a description of Ceylon insects by Motchoulsky, a continuation of the monograph of Marantiaceæ, begun by Körnicke in the Nouveaux Mémoires; an account, by Massalongo, of some New Zealand lichens, illustrated by neatly coloured plates, but, as I understand, wrongly placed as to genera and affinities, and the last, it is to be hoped, of a series of papers by the late Turczaninow (Turtshaninoff) on the supposed new or little known plants of the herbarium of the University of Charkoff, formerly his own. In former volumes Turczaninow had published a detailed flora of the Baical-Dahurian region, the result of his own investigations, and he had extensively and most liberally distributed the excellent collections he had made in those regions. His zeal for the science was great, and he had made considerable sacrifices to increase his general herbarium, and both before and after the transferring it to the University he devoted himself to the arrangement and naming the specimens. In this operation, whatever he could not make agree with the diagnoses given in the works at his command, was set down as new, and he commenced a series of papers in the Bulletin to give them names and diagnoses. Unfortunately, whether from a want of a sufficient knowledge of exotic plants, from a deficiency of materials for comparison, or from the fragmentary state of many of his specimens, he did not recognize many of the commonest tropical species, and his papers are full of erroneous identifications, bad species, mistaken affinities, and even gross blunders, which can now only be corrected where we possess corresponding specimens agreeing with his descriptions. He was, however, I am told, as

amiable in disposition as he was zealous; and in his later papers, where his errors have been pointed out to him, he candidly admits them, in some cases plausibly accounting for them, and in one instance even suggesting that he must have examined a loose flower that did not belong to the specimen he described. Some other naturalists might be named who have been equally hasty, but who, on discovering their errors, have taken care that no evidence should remain to solve the enigmas they have bequeathed to science.

The languages used in the Moscow Mémoires and Bulletin are generally French or German, with Latin technical characters. The few papers in Russian are, with a few unimportant exceptions, on strictly local subjects.

Next in order we have another Sclavonic language, the use of which in a journal of Natural History cannot be excused even on those pleas which might be urged in favour of the Russian. The Bohemian is at best the language of a very limited region, and there are but few of the educated classes in PRAGUE who are not, for other reasons, obliged to be acquainted with German; and yet from that town we received seven annual volumes in large octavo (1853 to 1859) of the Ziva, a journal of Natural History, Physics, and Mathematics, edited by Dr. Purkinje and written entirely in Bohemian. It is probably still continued, but, being useless to our Fellows, we declined taking it in exchange for our own publications; and yet there appear to be in it besides local subjects some anatomical and physiological papers, both in Zoology and Botany, which might be of interest—in vegetable anatomy and physiology by Ladislas Celakovski and Julia Saxa, in osteology by Purkinje himself, on Bohemian fish by Anton Frice, &c. There are a few plates and a considerable number of woodcuts; but the editor has probably discovered that he must only look for a popular sale at home, as in the later numbers he introduces an appendix for domestic medicine and economy.

IV. HUNGARY.

Hungarian Academies of Science have also offered us their Transactions in exchange for ours, which we have, for the same reason, declined. I am aware that in the quarto Transactions of the Magyar Tudomanyos Akademie some interesting south-east European animals and plants, including the interesting Gesneriaceous genus *Rhodopea*, have been first published; and we learn from a review in the Bulletin of the Academy of St. Petersburg,

(vol. v. 1861, p. 184), that the Transylvanian Transactions contain some good papers, especially one by Lazar on Transylvanian birds, but my own total inability to make out the language must be my excuse for entering into no further details as to the Transactions we possess in pure Hungarian. There is, however, a work entitled Verhandlungen und Mittheilungen des Siebenbürgischen Vereins für Naturwissenschaften zu Hermannstadt, in monthly numbers, 8vo, forming annual volumes, in German. I have only seen the eleventh volume for 1860, which, with a good deal of Geology, includes a series of papers by E. A. Bielz on Transylvanian Mollusca. Some Presburg publications will be mentioned presently amongst German ones.

V. Italy.

Very few of the Scientific Academies of Italy have in modern days contributed extensively to general Zoology or Botany, the most important in this respect being that of Turin. After having completed a first series of Memoirs in forty volumes, quarto, a new one was commenced in 1839, entitled Memorie della Reale Accademia delle Scienze di Torino, in two classes—the Physical and Mathematical Sciences, including Natural History, being separated from Moral, Historical, and Philological Sciences. Twenty volumes of the former have appeared up to 1863, the last received, the papers being in Italian, French, or Latin, and fairly illustrated by plates. The greater proportion of them relate to the fauna and flora of the late kingdom of Sardinia: Insects by Gené and Ghiliani; Mollusca, Crustacea, and the lower order of animals by Verani, Porro, Filippi, Strobel, Cornalia, and Pancari; Reptiles by Gené and De Natale; Mediterranean Fish by Filippi and Verani; Cryptogamous Plants by De Notaris, Meneghini, and Baglietto; and in Phænogamous Plants, Moris and de Notaris on the Flora of the island of Capraria, and de Notaris and Gennaris on the Ligurian flora. The fossil fauna of the country is illustrated by long papers of Bellardi, Michelotti and Sismonda, and the fossil flora by Visiani. On exotic and general subjects these volumes contain C. Bonaparte's Monograph of European Amphibia, Solier's Monograph of the tribe Molurides of Coleoptera, Traqui on Cypriote and Syrian Anthicini, Bellardi on Mexican Diptera, Zanardini's Adriatic Algæ, Vittadini's Monograph of Lycoperdineæ, De Notaris's American Jungermannieæ and Columbian Mosses, Figari and De Notaris's Red Sea Algology and Egyptian Agrostography, Clementi's Grecian and Eastern plants, a few miscellaneous exotic plants, chiefly Brazilian or from the Turin Gardens, described and figured

by Colla, Visiani, and Delponte, and miscellaneous papers on Animal and Vegetable Physiology by Bellingeri, Studiati, Savi, and Targioni-Tozzetti.

The Academy of Sciences of Bologna commenced their quarto Commentarii in 1731, the old series in nine volumes closing in 1783. The Novi Commentarii form ten volumes to 1850, in which the principal Natural-History papers are the Botanical ones by the two Bertolonis, father and son, and those by Ranzoni on fish and reptiles. In 1850 the title was adopted of Memorie della Accademia delle Scienze dell' Istituto di Bologna, of which we have twelve volumes to 1861, and two volumes dated 1862 and 1863 of a second series. These are heavy volumes, of a large quarto size, well printed; but the illustrations, chiefly lithographic, are not so satisfactory as the Turinese. The scientific subjects treated of are very various. Natural History rarely extends beyond one or two each in Zoology and Botany in each volume: descriptions by Alessandri or Calori of skeletons or other animal preparations in the Museum of Bologna, obtained chiefly by exchange from Amsterdam; a series of papers, zoological by Bianconi, botanical and zoological by the younger Bertoloni, on the natural productions of Mossambique transmitted to Bologna by Fornasini, an Italian residing there; one by Centro on a fly affecting wheat; by Bianconi on the development of tendrils in Cucurbitaceæ, and in each volume a number of the elder Bertoloni's Miscellanea Botanica, which we might almost characterize as an infliction on science analogous to that of Turczaninow above alluded to. Notwithstanding the numerous valuable physiological experiments and observations for which we are indebted to Italian investigators of the past century, they appear, with few exceptions, to have cared little in the present era for making or preserving any collections not immediately connected with the productions of their own country, or for otherwise extending their knowledge of exotic animals and plants. The consequence is, that when zealous naturalists like the two Bertolonis have received sets of specimens from distant lands, everything is new to them, and, they are but too apt to conclude, new also to science at large. I know not how it may be with the Mossambique animals; but it will be found but a very low estimate if we say that above hal the plants here described as new from Texas, East India, Mossambique, and Guatemala are well-known species; and a fair proportion are placed in wrong genera, or even in natural orders with which they are quite unconnected.

The Rendiconto delle Sessioni of the Bolognese Academy, a thin octavo each year from 1839 to 1864, are Reports of Proceedings of the character now demanded from most scientific bodies, with abstracts of papers read, and occasionally a short unimportant one given entire.

The Transactions of the Institute of Lombardy at Milan, in two series, the first in five quarto volumes, from 1812 to 1838, entitled Memorie dell' I. R. Istituto del Regno Lombardo-Veneto, the second in nine volumes, from 1847 to 1856, as Giornale dell' I. R. Istituto Lombardo di Scienze, Lettere et Arti e Biblioteca Italiana, contain nothing worth special mention either in Zoology or Botany. In 1859 a Society was established especially for Natural History, at first as a Geological Society, that being the branch which its promoters specially followed; but in the following year the name was changed to that of Società Italiana di Scienze Naturali, and from that time they have published an annual volume in octavo of Atti. At first the papers were entirely geological; to these were gradually added a few on Italian insects, mollusca, and other lower orders of animals, Cantani on the secondary membrane of the vegetable cellule, numerous communications on the silkworm disease which has committed such ravages in that country, two papers transmitted by Giglioli from England, on *Apteryx*, and on the geographical distribution of birds, the latter founded in a great measure on Dr. Sclater's communications to our Journal; and the last few Numbers of the Atti for 1864 contain Caruel's Florula de Montecristo, and descriptions of a few Italian plants, and a commencement of Calvadori's Enumeration of Sardinian birds.

The Società Italiana delle Scienze, originally founded at Verona by A. M. Lorgna, and afterwards transferred to Modena, commenced their quarto Transactions in 1782, each volume in two separate parts, Matematica and Fisica, at first with a continuous paging through the two; but in the later volumes, the parts having increased in bulk sufficiently to be separately bound, there is a separate paging for each. The first series was closed with the twenty-fifth volume, and contains scarcely as much Natural History as even the Bologna Memorie. In the later volumes I only find a Palæontological paper, and a few short botanical descriptive ones by Savi, Tenore, and Bertoloni, the plates not exhibiting any very high stage of art. In 1862 a first volume was published of a second series, containing in our sciences only a paper on some fossil plants of Italy by Massalongo, and descriptions of some supposed new Brazilian plants by Brignoli, including a re-

vised limitation of the genus *Cinchona*, reducing to it *Exostemma*, *Buena*, and several others, evidently founded on such compilations as Walpers and Dietrich, without having examined specimens of one tithe of the species so arbitrarily transposed, and totally ignorant even of Weddell's monograph of 1849.

The Proceedings of the Society are prefixed to each volume of the Memoirs. The later volumes contain an amusing discussion between the President Marianini and the Minister Matteucci (one of the forty members) with regard to a remodelling of the Academy, proposed by himself and some other members, and resisted by the majority, including the President, who at last is told that he had better resign than continue to be an obstacle to the Society's progress.

The Royal Society receives also a Zoological Journal published at Modena, and edited at first by Canestrini and others, and now by Canestrini alone, entitled Archivio per la Zoologia, l'Anatomia e la Fisiologia. It appears in half volumes, at first at intervals of half a year, now of above a year, there being as yet only two volumes and a half from 1861 to 1864. The papers it contains are chiefly entomological and ichthyological.

In Venice, the Imperiale Reale Istituto Veneto di Scienze, Lettere ed Arti commenced their Atti in 1840, in large quarto. Of the first portion, previous to the disturbances of 1848, there are two thin volumes, including, with a variety of other subjects, a very few botanical papers of no great importance, by Visiani, Zanardini and others, and some zoological ones on the lower orders of animals, or anatomical, by Contarini, Nardo, Meneghini, &c. After 1848 the Atti was renewed with greater activity ; and up to the end of 1862 we have ten volumes in very large quarto with many plates often on an unnecessary and inconveniently large scale, and eight thick octavo volumes with the proceedings and shorter papers. From the digest of these volumes given by the President Bellaviti, vol. ix. p. 30 of the Atti, we find that they contain fourteen papers more or less botanical by Visiani, Massalongo, and Zanardini, including Visiani's enumeration of the plants of the Venetian territory, and seventeen zoological, either physiological or relating to the lower orders of animals, all in the Italian language. The most recent parts comprise : Diptera distributed according to a new method by Livry ; Betta on Venetian Mollusca, Serpents, and Amphibia; Saccard on the Flora of Treviso ; Zanardini on Adriatic Algæ ; and papers on fossil plants, by Visiani, Barone, and Zigno.

At Naples, from 1819 to 1851, the Royal Academy of Sciences published six quarto volumes of Transactions as Atti della Reale Accademia delle Scienze (or sometimes della Società Reale Borbonica, Accademia delle Scienze), with nothing worth mentioning in Natural History. In 1852 a second series was commenced as Memorie della Reale Accademia delle Scienze, divided into Mathematical, Natural, and Moral Sciences. In the two volumes of this set I find in our sciences only Costa's papers on a few Italian Crustacea and insects, and on the Italian fossil fish and Foraminifera. In 1862 the Academy was reconstituted as Società Reale di Napoli, Accademia delle Scienze Fisiche e Mathematiche; and their volume of Atti for 1863 comprises various papers by Gasparini on Vegetable Physiology, and one by Costa on Calabrian Entomology. Each paper forms a separate Number, with a separate paging, but without any indication of a separate sale.

The Accademia Gioenia di Scienze Naturale of Catania appear to have been very active for a place of so few resources. From 1825 to 1837, they published twelve thin quarto volumes of Atti, and a second series, to 1864, extends already to nineteen volumes. The paper, typography, and illustrations, at first very coarse and rude, improve in the later volumes. The Natural-History papers relate chiefly to the Agriculture, Fauna, Flora, and Geology of the immediate vicinity of Mount Etna.

Other Academies with their Transactions appear to have started at different times in various Italian towns, but to have had only an ephemeral and unimportant existence, and botanical journals have been occasionally attempted. In 1803–4 Viviani published at Genoa 2 parts, octavo, of Annales Botanici, with descriptions of Italian plants, and extracts from foreign botanical works; and again, in 1845, Professor Parlatore, at Florence, commenced a Giornale Botanico Italiano, devoted also chiefly to the Italian flora, or to reviews of books. The first Numbers came out in rapid succession, but it soon lingered on only at irregular intervals, and, I believe, came to a final close with the end of the second volume in 1847.

The Italian Transactions generally are in the language of the country, with a few papers in French, and occasionally in Latin, which is also frequently used for technical characters.

VI. Spain.

In 1847, the old Academy of Natural Sciences of Madrid, which in its time had done some good work, was reorganized as

Academia Real de Ciencias exactas fisicas y naturales, and thenceforth the Memorias de la Real Academia de Ciencias de Madrid were published in three divisions, called series. Of the third, or Ciencias Naturales, we have five quarto volumes from 1850 to 1861, comprising a good deal of Geology, papers by Vidal on the birds of Albufera, by Guirao on those of Murcia, and De los Rios Naceyro on those of Galicia, Machado's Erpetologia hispalensis, Graells on the larvæ of *Agapantia*, and on new insects of central Spain, and Mendoza on the organs of generation in animals,—and in Botany, Graells's Ramilletes de Plantas Españoles, Llano's Appendix to the Philippine Flora, and Mariano del Amo on the geographical distribution of some families of plants in the Peninsula.

Towards the close of the last century Cavanilles conducted a periodical, entitled Anales de Ciencias Naturales, which few persons appear to have seen, and the characters of new genera and species there described have been carelessly and sometimes incorrectly abstracted by Sprengel and others. The only copy I know of in this country is in the British Museum.

In the South American States formerly Spanish colonies, there have been articles on Natural History in the Mercurio Chilene; and at Bogota a Boletin de la Sociedad de Naturalistas Neo-Granadinos, in octavo, had attained a tenth part in 1860; but I have not seen either work.

VII. Portugal.

We have on our shelves the Historia e Memorias da Academia Real das Sciencias de Lisboa, in three series, full-sized quarto,—the first in twelve volumes, from 1797 to 1839; the second in five, from 1843 to 1856; the third in three volumes, down to 1863. Although they have professedly a class of Natural Sciences, I can find in the whole twenty volumes nothing in Zoology or Botany, except an account of two or three Portuguese fish, and some French speculations on Organogeny.

In Brazil, a Vellosian Society of Natural History, established in 1850 at Rio Janeiro, commenced some quarto Transactions, with rather rude lithographic plates, under the double title of Trabalhos da Sociedade Velloziana, and of Bibliotheca Guanabarense —divided into two sections for Zoology and Botany, but the papers following each other in one continuous paging. Some of them, especially on Brazilian timber-trees, by Allemaõ, are interesting, but the work appears to have come to an end the following year, 1851, forming altogether one very thin part.

VIII. Dutch Netherlands.

The Hollandsch Instituut, at Amsterdam, which after the pacification of 1814 became the Koninklijk Nederlandsch Instituut van Wetenschappen, Letterkunde en Schoone Kunsten, is divided into four classes, after the model of the French Institute, the first class being also sometimes called Koninklijke Akademie van Wetenschappen. The first series of its quarto Transactions, entitled Verhandelingen der Erste Klasse van het Koninklijk Nederlandsch Instituut, was in seven volumes, from 1812 to 1825, and contained no Natural History. The second series, or Nieuwe Verhandelingen der Erste Klasse, &c., in thirteen volumes, from 1827 to 1848, and the third, or Verhandelingen &c., derde Reeks, in five thin volumes, 1849 to 1852, has a few scattered papers by Vrolik, Sandifort, Numann, and Schroeder van der Kolk on questions of animal physiology and comparative anatomy, monstrosities, &c., by Fremery and Reinwardt on fossil animals, and isolated notices on a stranded whale by Schlegel, and on the Potto by Van der Hoeven. In Botany we have Miquel's Revision of Casuarinæ, African figs, American Cycadeæ, and Analecta Botanices Indica, Van Halle on a new Polypodium, and a whole volume in German, occupied by Schacht on the development of the embryo. In 1854 the present series was commenced under the altered title of Verhandelingen der Koninklijke Akademie van Wetenschappen, with a separate paging for each article, it having hitherto been continuous through each volume. Of this series we have nine volumes down to 1862. It contains, like the former series, several papers on Animal Physiology, Comparative Anatomy, and Palæontology by Vrolik, Schroeder van der Kolk, Van der Hoeven, and Bosquet, one by Harting on two Cephalopods, and Bleeker's Ichthyological Fauna of Japan. In Botany, besides observations on the Anatomy of *Sphagnum*, by Dozy, and of aërial roots of Orchideæ by Oudemans, we have only Van der Sande Lacoste's Javan Hepaticæ, and Van den Bosch's Javan Hymenophylleæ.

The Academy commenced a separate publication of their Proceedings, in large octavo, with short papers and a few plates, in 1841, forming six volumes to 1846, under the title of Het Instituut, or, Verslagen en Mededeelingen uitgegeven door de vier Klassen van het Koninklijk Nederlandsch Instituut van Wetenschappen, Letterkunde en Schoone Kunsten, in three volumes. Amidst a great variety of matter, scientific and literary, there are short communications in palæontology by Fremery and Van der Hoeven,

by Temminck on the Japan fauna, by Vrolik on the Carnivora, and by Miquel, Spletgerber, and De Vriese in Systematic Botany. Since 1846 the Proceedings have been separately published in an annual volume entitled Jaarboek van de Koninklijke Akademie van Wetenschappen gevestigd te Amsterdam; and an octavo Journal was commenced under the title of Tijdschrift voor de Wis- en Natuurkundige Wetenschappen uitgegeven door de Eerste Klasse van het Koninklijk Nederlandsch Instituut van Wetenschappen, Letterkunde en Schoone Kunsten: five volumes, with a few indifferent plates, were issued, dated from 1848 to 1852, containing very little Natural History, a few entomological papers by D'Ailly, Verhuell, and Numann; physiological and palæontological by Vrolik; botanical, chiefly relating to Surinam plants, by Miquel, Focke, and Van Halle; De Vriese on a new Javan *Lastræa*; Montagne on Surinamese, and Miquel on other exotic fungi. In 1853 the Tijdschrift was followed by Verslagen en Mededelingen der Koninklijke Akademie van Wetenschappen, Afdeeling Natuurkunde, but including Mathematics and Physics. In the sixteen volumes, 8vo, issued up to 1864, there is rather more Natural History than in the previous series, consisting of several papers on Animal Physiology, Anatomy, and Palæontology, by Vrolik, Van der Hoeven, Schroeder van der Kolk, Jæger, Schlegel, Mulder, many of Bleeker's on the Ichthyology of the Archipelago, of Australia, South Africa, South America, &c.; Van Hasselt on some Snakes; Snellen van Vollenhoven on Indian Lepidoptera; Harting on a bird's nest; on various points of vegetable physiology and anatomy by Oudemans, De Vriese, and Van Halle; on some Indian Orchids by Blume; on Ficeæ, Australian Cycadeæ, *Rhodoleia*, and new Apocyneæ by Miquel; on Javan Hepaticæ by Van Sande La Coste; on Javan Oaks by Oudemans; and Hymenophylleæ by Van den Bosch.

These publications of the Dutch Academy are for the most part in the Dutch language, with a few papers in French or German, and more or less use of Latin for technical characters. The mixture of subjects is often very great, and particularly inconvenient in the compact octavo publications where the advantages of the small form and close type are quite overbalanced by the large proportion of matter useless to himself which each subscriber would be obliged to take in, thus excluding these works from all but large libraries. One instance I may mention, as having recently occurred to myself. Miquel had in the Linnæa published a detailed description of a new Surinamese plant re-

ferred to Leguminosæ—with characters different, it is true, from those of the Order as far as known to me, but which, on an authority like his, I admitted without hesitation; but now I have accidentally come across, not in the Linnæa, where the plant had been published, but in the above Tijdschrift, amidst agriculture, algebra, and physics, a short paper, in Dutch, on the relations of Polygaleæ to Leguminosæ, by which it incidentally appears that *Rodschiedia* is a species of *Securidaca*. This correction, although made nearly fifteen years since, has been so concealed as not to come in the way of any compiler, and has now turned up too late for adoption in the Genera Plantarum I am engaged in with Dr. Hooker.

Several Journals of Natural History have been successively started at Leyden by private individuals, but all have come to an end after a few years' existence. The Bijdragen tot de Natuurkundigen Wetenschappen verzameld door Van Halle, Vrolik en Mulders, in seven volumes 8vo, from 1826 to 1832, included all branches of Natural History and Physics, the zoological and botanical papers not being numerous, and relating chiefly to the lower animals and plants of the country. This was followed in 1834 by Van der Hoeven and De Vriese's Tijdschrift voor Natuurlijke Geschiedenes en Physiologie, 8vo, with a few plates, each volume divided into two parts, with separate pagings,—1st, Oorspronkelijke Stukken (original papers); 2nd, Boekbeschouwing en Letterkundige Berigten (Reviews and Literary Notices). It was carried on through twelve volumes to 1845, and includes geology and kindred sciences. In Zoology there are contributions by Temminck, S. Muller, Van der Hoeven, Vrolik, Snellen van Vollenhoven, Schroeder van der Kolk, and a few others; and in Botany the chief papers relate to the floras of Surinam and of the Indian Archipelago.

In 1848 the Nederlandsch Kruidkundig Archief, in octavo parts, with one plate in each, and exclusively devoted to botany, was commenced under the editorship of De Vriese, Dozy, and Molkenboer. It came out very irregularly in the following years, and appears to have ceased with the end of the fourth volume in 1848. It contains several papers on the plants of Surinam and of the Eastern Archipelago, but is chiefly devoted to the Botany of the Netherlands.

A botanical and horticultural periodical, with plates, some coloured, chiefly with a view to publishing the novelties introduced from the Dutch Colonies, was commenced in 1858 by Siebold and

De Vriese, in large octavo, under the title of Annales d'Horticulture et de Botanique, ou Flore des Jardins du Royaume des Pays-Bas. It was carried on through five volumes to 1861, and then, I believe, ceased altogether.

Of a Jaarboek der Koninglijk-Nederlandsche Maatschappij tot Aanmoeding van den Tuinbouw (Annuary of the Royal Netherland Society for the Encouragement of Horticulture) we have received one part in large octavo, dated Rotterdam, 1864—containing a description and large coloured figure of a new genus of Apocyneæ, and some other botanical papers. Whether the work is to continue or not, or how much of botany it is to contain, I do not know.

The Annales Musei Botanici Lugduno-Batavi, a collection of papers on Botany, publishing in Numbers in folio, with occasional plates, under the superintendence of Miquel, appears at very irregular intervals. There are now ten parts out, forming one volume and a portion of a second, dated from 1863 to 1865. It relates chiefly to the Botany of the Dutch foreign possessions.

A Zoological Society established at Amsterdam, under the singular title of Natura Artis Magistra, commenced in 1848 publishing large quarto Transactions, got up with considerable luxury of typography and illustration, entitled Bijdragen tot de Dierkunde uitgegeven door het Koninglijk Zoologisch Genootschap Natura Artis Magistra, and consisting of papers chiefly on the higher orders of animals. These Transactions do not appear to have gone beyond a single volume, dated from 1848 to 1854; but ten years later the same Society undertook a large octavo periodical, with a few plates, entitled Nederlandsch Tijdschrift voor de Dierkunde, under the editorship of Bleeker, Schlegel, and Westerman. Of this I have only seen a first volume, dated 1863, and divided into contributions from correspondents (or original papers), zoological proceedings of the Academy of Sciences, and reports from the Zoological Garden.

An Entomological Society, dating successively from the Hague and Leyden, and now from Haarlem, has published seven thin octavo volumes from 1858 to 1864, with coloured plates, of a Journal entitled Tijdschrift voor Entomologie, uitgegeven door de Nederlandsche Entomologische Vereenigung, and devoted exclusively to Entomology.

All the above Journals, with the exception of the Flore des Jardins, are in the Dutch language, with more or less of Latin for the technical characters.

The Dutch Colonies in the Indian Archipelago were amongst the first to apply themselves to the cultivation of science and literature. The Society of Arts and Sciences of Batavia commenced their Transactions in 1779, under the title of Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen. The first volumes are in octavo, with, as might be expected, coarse paper and typography ; but they soon extended to small quarto, and in 1849 to full-sized quarto, with much improvement in the execution. There are now twenty-nine volumes up to 1862 ; they contain, however, no Natural History of any importance, with the exception of Bleeker's Ichthyological papers in some of the later volumes. These Transactions are chiefly in Dutch, with some memoirs (it is to be supposed, on literary or historical subjects) entirely in Oriental language and character. Since 1853 the same Society has also published an annual volume of a Journal or Tijdschrift of their proceedings, including a few short papers, chiefly historical, literary, or ethnographical.

Another scientific Society in Batavia has published, up to 1859, six quarto volumes of Transactions under the double title of Acta Societatis Scientiarum Indo-Neerlandicæ, and Verhandelingen der Natuurkundige Vereenigung in Nederlandsch Indië. Amidst various other sciences, these volumes contain a considerable number of Bleeker's Ichthyological and Carcinological papers, occupying the greater portion of nine volumes, besides Bernstein on Javan birds and birds' nests, Rosenberg on Sumatran birds, Doleschall on Arachnidæ of the Archipelago, Hasskarl on Javan ferns and on some plants of the Buitenzorg garden, and Zollinger on *Rottlera*. The papers are mostly in Dutch, but usually with Latin technical characters ; and every paper, however short, and although several on the same subject sometimes follow each other, has its separate paging.

IX. Belgium.

The Société Littéraire de Bruxelles, established in 1769, through the exertions of Count de Cobenzl, Imperial Minister Plenipotentiary to the Low Countries, was transformed in 1772 by the Empress Maria Theresa into the Académie Impériale et Royale des Sciences et Belles-Lettres de Bruxelles. Broken up on the second invasion of the French armies in 1794, it was re-established in 1816, dropping the word Impériale from its title. The old series of its quarto Transactions consists of five volumes, from 1777 to 1788, entitled Mémoires de l'Académie Impériale et

Royale des Sciences et Belles-Lettres de Bruxelles, containing little if anything now worth referring to in Natural History. In 1818 a new series was commenced as Nouveaux Mémoires de l'Académie Royale des Sciences et Belles-Lettres de Bruxelles, which, with the twentieth volume, in 1847 was altered to Mémoires de l'Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique, but without recommencing the series of volumes, of which the last received is the thirty-fourth, dated 1864.

In all these volumes, the papers on the very different subjects coming within the scope of the Academy, scientific, literary, or artistical, are mixed; but, with a view to rendering them separable, each paper has a separate paging. Natural-History papers do not occupy a very large portion of the space, and among them many are palæontological, and a few on the local flora and insect fauna, a considerable number by Van Beneden on Malacology and Zootomy, some also by Udekem on Infusoria, by Cantraine on Mediterranean Malacology and Ichthyology, by Poelman on the Anatomy of the Tapir, on questions of Vegetable Physiology and Carpography by Dumortier, on Vegetable Physiology and a few garden plants by Morren, which, with Courtois's European Limes, Decaisne's Anatomy of Mistletoe, Martens and Galleotti's Mexican Ferns, and Spring's Lycopodiaceæ, make up the botanical portion.

During the same period the Academy published a separate quarto series, with plates, of memoirs whose authors were not yet Academicians. Of these we have thirty-one volumes, ranging from 1818 to 1863, commenced under the title of Mémoires couronnés par l'Académie Royale des Sciences et Belles-Lettres de Bruxelles, which, with the sixteenth volume (1843), was changed to Mémoires couronnés et Mémoires des Savans Étrangers, publiés par l'Académie Royale des Sciences et Belles-Lettres de Bruxelles, and again, with the nineteenth volume (1847), further altered by the substitution of Académie Royale des Sciences, Lettres et Beaux-Arts de Belgique for the former name of the Academy. These Mémoires couronnés, like the other series, have no great proportion of Natural-History papers, and those chiefly Geological or Palæontological. The principal ones in Zoology and Botany proper are Lambotte on the Anatomy of Batrachians, Verlooren on Circulation in Insects, Udekem on an Earthworm, Poelman's Anatomy of *Python*, Schuermans on a Lemur, Decaisne on Madder, and Coemans on *Pilobolus* (Fungi).

The Belgian Academy prides itself in being one of the first to set the example of giving their Minutes of Proceedings (with abs-

tracts of the papers read) in a more convenient octavo form, which could be issued at much shorter intervals than the quarto Transactions. But as they also include at first short communications only, but subsequently longer papers also *in extenso*, and as each branch of science or literature is encumbered with all the others, the advantages of the compact form are lost. Under the title of Bulletin de l'Académie, &c., twenty-three volumes of the first series, from 1832 to 1856, with one of index, and seventeen of the second, from 1857 to 1864, had so grown in thickness that, from the sixth of the first series (1839), each one is divided into two parts, with separate paging, so as practically to make two volumes each year. The zoologist has thus to seek in a mass of above seventy volumes for a few papers by Wismael, Beneden, De Sélys-Longchamps, Udekem, and others; and although the botanist may find Martens and Galeotti's enumeration of Mexican plants occupying a considerable portion of the volumes for a single year (1847, tenth of the first series), there are several smaller contributions, independently of those relating to Belgian botany, that are so scattered and lost in the mass of heterogeneous matter, that they are almost universally overlooked.

The Société Royale des Sciences de Liège, established in 1835, was divided into two sections—Sciences d'Observation, and Sciences de Calcul; but the papers read in the two sections were mixed in their published Transactions, entitled Mémoires de la Société Royale des Sciences de Liège. Eighteen volumes, large 8vo, with plates, are dated from 1844 to 1863. More than one-third of them are devoted to Entomology, by Lacordaire, De Sélys-Longchamps, Chapuis, Candèze, and others, some papers filling one, two, or even three volumes. There are also a paper by Beneden on the Ears of Birds of Prey, by Malherbe on a Brazilian *Picus*, by Drouet on French Mollusca, and one botanical one—Decaisne on *Diplosiphon*.

The Bulletins de la Société Royale de Botanique de Belgique at Brussels form a thin octavo volume of two or three parts in each year, with an occasional plate. Three volumes have been received, from 1862 to 1864, hitherto confined to either local or cryptogamic Botany.

Société de Sciences Naturelles, Grand-duché de Luxembourg, afterwards Société des Sciences Naturelles du Grand-duché de Luxembourg, is the sole title of the Transactions published by the Society at Luxembourg in octavo. There are seven parts, or years dated from 1853 to 1864, containing, amongst a great variety of

subjects, some papers on the local fauna and flora, especially insects and cryptogams.

There are several Belgian horticultural journals and periodicals with more or less of Botany; and two of them especially, under the direction of the two great rival nurserymen of Ghent, contain numerous original descriptions and figures of new plants, with occasional botanical notices and short monographs. The Flore des Serres et des Jardins de l'Europe, by Van Houtte, with the occasional assistance of Planchon, Decaisne, and other eminent French botanists, was commenced in 1845, and, with some interruption a few years since, still continues its monthly issue in octavo, with plates mostly coloured in imitation of (and in the early volumes often copied from) our Botanical Magazine and similar publications. It is now in its fifteenth volume, the last five sometimes considered as a second series. The rival publication, edited by Charles Lemaire, and entitled Le Jardinier Fleuriste, Journal général des progrès et des intérêts Botaniques et Horticoles, was originally commenced in 1851 in large octavo, with coloured plates the majority copied from English periodicals, and continued through four volumes to 1854. It was then recommenced by the same editor, but, it would appear, more immediately under the direction of Verschaffelt, with the new title of Illustration Horticole, Journal spécial des Serres et des Jardins, with more original plates and matter. It appears monthly, and is now in its twelfth annual volume.

X. Germany.

1. *Transactions and Journals of Scientific Associations.*

The peripatetic Academy Naturæ Curiosorum, which changes its locality according to the residence of its president, considered itself, under the *ancien régime*, as *the* Physico-Medical Academy of the German Empire, and was then established at Nuremberg, but with the understanding that it might move to any Imperial city. It was supported by the Imperial Government, and published under the long title of Acta Physico-Medica Academiæ Cæsareæ Leopoldino-Carolinæ Naturæ Curiosorum, a first series of ten small quarto volumes, from 1730 to 1754, and, as Nova Acta, a second series of eight volumes, from 1757 to 1791, of Transactions, with little if anything of Natural History that need now be referred to. After the publication of the eighth volume, a long interruption ensued. The successive deaths of two presidents in the course of a twelvemonth, and the horrors of the French inva-

sion and wars, resulted in the breaking up of the meetings of the Academy, the seizure of their funds, and the destruction of the greater part of their property. It was not till after a lapse of more than twenty years that the Society was, on the reestablishment of peace, reconstituted at ERLANGEN, under the presidency of Von Wendt; and in 1818 a new volume of the Transactions appeared in a larger quarto form, with improved typography and paper, forming the ninth volume of the Nova Acta Physico-Medica Academiæ Cæsareæ Leopoldino-Carolinæ Naturæ Curiosorum, or the first with a German title-page of Verhandlungen der kaiserlichen Leopoldinisch-Carolinischen Akademie der Naturforscher. The German language was now admitted, and in most papers, with the exception of technical characters, generally replaced the Latin; and the volume, although continuously paged, is divided into four sections, Botany, Zoology, General Physics, and Medicine, the first occupying more than one-half.

After Von Wendt's death, the Academy passed under the presidency of Nees von Esenbeck, then resident at BONN, and considerable discussion and jealousies arose as to its moving from the Bavarian to the Prussian dominions, the old Empire, under which its regulations had been originally formed, having disappeared. It is said that amongst the arguments which prevailed in favour of its moveability were those of Oken, the same which suggested to him his plan for the German Association for an annual gathering, in different towns, of Naturalists and Medical Men, Naturforscher und Aertzte, which has been the origin of all the peripatetic associations now so successful in this and other countries*. The Academy remained many years at Bonn, then passed with its president to BRESLAU, from whence it moved to JENA under Kieser, and is now at DRESDEN under Carus. Since the removal from Erlangen, twenty-two volumes of Transactions have been published, not divided into sections, but often accompanied by supplements as large as the volumes, or by papers appended to the prefaces, with a variety of paging, creating some confusion in references, besides that the volumes themselves were for many years differently numbered in the German title, which supposed the series to commence with the Erlangen volume, and in the Latin one, which included the eight old ones. With the twenty-fifth, however, this discordant numbering ceased, the German title skipping from the

* The merit of having originated this plan is also claimed by the Société Helvétique des Sciences Naturelles, but perhaps under the same influence of Oken.

sixteenth to the twenty-fifth, and the supplements were gradually discontinued. The reason for having allowed them was probably in order that the separate copies of long memoirs might retain the original paging without the appearance of incompleteness. This has now been accomplished by separately paging every article. The typographical execution and illustrations have been gradually improved, and in the last volume, the thirty-first (1864), the size has been still further enlarged. The title has been slightly shortened by the omission of the words "Physico-Medica" since the supplements to the nineteenth volume, but is still inconveniently long for references. The papers of the whole twenty-two volumes are chiefly botanical or zoological, many of them long, and well known from the separate copies distributed. They are also here and there intermixed with a few in Mineralogy, Geology, Chemistry, Astronomy, Optics, Meteorology, Ethnology, &c.

The Proceedings of the Society for a long time were included in the prefatory matter of the different volumes, then for a short time published in Seemann's Bonplandia, and now form separate quarto Numbers under the title of Leopoldina. They include a few abstracts of papers and short reviews, besides the formal proceedings.

The voluminous publications of the Royal Society of Sciences of GÖTTINGEN needed not to have been here mentioned, but that some botanical papers of Murray's and Schrader's in the older series are not unfrequently quoted, and the present series has been selected by Grisebach for some of his contributions to systematic and descriptive botany, which are always too valuable to be lost sight of. These, and a few zoological papers of Berthold's on Amphibia, Reptiles, and Crustacea, are almost the only ones connected with any branch of Biology in the whole set, on an average about one paper for every two volumes. The different series, all in 4to, many of them distinguished only by the most trifling alterations in the title, are as follows :—

1. Commentarii Societatis Regiæ Scientiarum Gottingensis, 4 vols. 1751 to 1754.

2. Novi Commentarii Societatis Regiæ Scientiarum Gottingensis, 8 vols. 1769 to 1777.

3. Commentationes Societatis Regiæ Scientiarum Gottingensis, 16 vols. 1778 to 1808.

4. Commentationes Societatis Regiæ Scientiarum Gottingensis Recentiores, 8 vols. 1808 to 1837.

5. Abhandlungen der königlichen Gesellschaft der Wissen-

schaften zu Göttingen, commenced in 1843, and the last volume received, the 11th, for 1863.

In the first four series historical, physical, and mathematical sciences are mixed; in the Abhandlungen, the papers are divided into three classes, with separate pagings and titles, the Physikalische, the Mathematische, and the Historisch-philologische.

The Nachrichten von den königlichen Gesellschaft der Wissenschaften und der Georg-Augusts Universität zu Göttingen, published in Numbers, forming annual volumes, foolscap 8vo, amidst short papers on all branches of science, contain a few zoological and botanical ones, as, for instance, in the volume for 1864, we find Grisebach's Review of Venezuela Bromeliaceæ, with descriptions of new genera and species, and Keferstein on the geographical distribution of Prosobranchia.

The Royal Academy of Sciences of Berlin, established early in the eighteenth century, published at first an occasional quarto volume in Latin, under the title of Miscellanea Berolinensia, of which eight volumes appeared up to 1744. These were followed by French Mémoires de l'Académie Royale des Sciences de Berlin, in fifty-four volumes in three series: the first, of twenty-five volumes from 1745 to 1769; the second, as Nouveaux Mémoires, in sixteen volumes, from 1770 to 1785; and the third, as Mémoires again, in thirteen volumes, from 1786 to 1804. They then began the present German series, entitled Abhandlungen der königlichen Akademie der Wissenschaften zu Berlin. Of this there are now forty-six thick volumes, the first comprising the Transactions from 1804 to 1811, the four following ones from 1814 to 1823, since which there is a volume for the Transactions of each year, although generally the date of publication is one or two years in arrear; and there is occasionally a supplemental volume, the last received being the volume for 1863, with the publication-date for 1864. The volumes not being numbered, this double date on the title-page occasions some confusion in references. Each volume of the present German series is divided into three sections, each with a separate paging: 1. Physikalische; 2. Mathematische; 3. Philologische and historische Abhandlungen. There are often many plates, and those of the later volumes are very good. The zoological and botanical papers are not numerous, but some of them important: the principal ones contained in the last twenty volumes are Lichtenstein and Peters's zoological papers, chiefly on Mammifera of the Berlin Museum, or on Mossambique Mammalia and Brazilian Lizards; only one short

entomological paper, by Klug on *Synemon*; various contributions to Palæontology by v. Buch, Müller, Beyrich, and Hensel; several by Ehrenberg on microscopic organisms; a series of memoirs by Müller on the structure and development of Echinodermata; by Link, Karsten, and Hanstein, on questions of vegetable Anatomy; A. Braun's Individuum, and Parthenogenesis and Polyembryony; and a few systematic-botanical papers by Kunth and Klotzsch.

In 1836 the Academy commenced the reports of their proceedings in octavo, published monthly, except during the summer vacation, under the unmanageable title of Bericht über die zur Bekanntmachung geeigneten Verhandlungen der königlichen preussischen Akademie der Wissenschaften zu Berlin, each year forming a volume, at first a thin one, but gradually extended. In 1858 the general title was shortened to Monatsbericht der königlichen preussischen Akademie der Wissenschaften zu Berlin; and an excellent index to the first twenty-three volumes was soon afterwards published. These Proceedings do not separate the Physical from the Mathematical and Philological and historical classes: they include abstracts of the papers read; and, especially in the later volumes, there are often short papers *in extenso*, with a few plates. Fortunately those on zoological and botanical subjects, not repeated elsewhere in more detail, are very few. The most important in the recent volumes are Peters's descriptions of animals from the Museum of Berlin, Häckel on the Mediterranean Radiolariæ, Ehrenberg on Northern Deep-Sea Microzoological Productions, De Bary on *Cæoma*, A. Braun on South American Characeæ, and some notes on *Isoëtes* and *Marsilea*, and Klotzsch's review of Aristolochiaceæ.

The Gesellschaft naturforschender Freunde zu Berlin was established in 1773, and published sixteen volumes of Schriften in octavo, from 1775 to 1794, with little, if anything, now deserving of notice. In 1795 they made great efforts to reorganize and improve their publications, and a new series appeared, entitled Der Gesellschaft naturforschender Freunde zu Berlin neue Schriften, 4to, with plates. Of this there are four volumes, from 1795 to 1803, containing, besides Mineralogy, Geology, Physics, and local Natural History, a few short zoological papers and several in botany, by Willdenow, Swartz, Link, and others. After another interruption, it was resumed in 1807 as a quarterly publication, four parts 4to, forming a thin annual volume with indifferent plates, under the title of Der Gesellschaft natur-

forschender Freunde zu Berlin Magazin für die neuesten Entdeckungen in der gesammten Naturkunde. This series includes also Geology, Mineralogy, Chemistry, Physics, and Mathematics; but there are a considerable number of zoological papers by Lichtenstein, Klug, and others, and a few in Botany, at first by Willdenow and Swartz, afterwards by Nees, Treviranus, Link, Sprengel, and Lehmann. The parts soon got into arrear, and came to an end with the eighth volume for 1814 published in 1818. Several years afterwards a further attempt was made; but I only know of one volume, dated 1829, under the name of Verhandlungen der Gesellschaft naturforschender Freunde zu Berlin.

A Botanical Society at Berlin publishes a volume of Journal of about twenty sheets in each year, 8vo, which I have not seen.

The Berliner entomologische Zeitschrift herausgegeben von dem entomologischen Vereine in Berlin, is an annual octavo volume, usually in quarterly parts, with a few plates; it extends to four volumes, from 1857 to 1860, exclusively devoted to Entomology.

Vienna, notwithstanding the eminent men it has produced, and the richness of some of its collections, is not to be reckoned amongst the old academic centres of Germany. In 1835 and 1836 the presence of a number of active young naturalists, more or less connected with the Imperial Museum of Natural History in the Burg palace, induced the directors to set on foot a publication in imitation of the Annales and Mémoires of the French Museum. It was published in quarto parts, with plates; and two volumes were nearly completed in the three years from 1835 to 1837, under the title of Annalen des Wiener Museums der Naturgeschichte. The last part, completing the second volume, appeared many years later, after which the work wholly stopped. These volumes were limited to Zoology and Botany, comprising descriptions of Brazilian Fish and Reptiles by Natterer, and papers in Ornithology by Fitzinger and Heckel, in Ichthyology by Heckel, in Entomology by Kollar and C. Marshall, in Helminthology by Diesing, and in descriptive Botany by Endlicher, Fenzl, and myself.

At length (in 1847) an Imperial Academy of Sciences was established, and divided into two classes, the Philosophic-historical and the Mathematic and Natural-Science Classes. The political disturbances, however, of the following year delayed their operations, and the first volume of their Transactions did not appear till 1850, since which they have been regularly issued to the present time under the title of Denkschriften der kaiser-

lichen Akademie der Wissenschaften, Mathematisch-naturwissenschaftliche Classe. The form first adopted was in folio, which, after the first four volumes, was reduced to large quarto, and has been preserved to the present time with great luxury of typography, and the work is illustrated by a profusion of plates, many of them beautiful in execution. The last volume received is the twenty-third, dated 1864; each one is divided into two parts, with separate pagings, entitled Abhandlungen von Mitgliedern der Akademie, and Abhandlungen von Nichtmitgliedern, according as the authors of the papers are members of the Academy or non-members, a most inconvenient division, as complicating references and the more so as a different division is adopted for the Proceedings. A considerable portion of these volumes is, as usual, occupied by mathematical, physical, chemical, geological, &c., papers, and in Natural History Palæontology takes a conspicuous place, including Ettingshausen's papers on fossil ferns and other impressions; and, in illustration of them, on the variation of recent leaves and ramifications of ferns, with a large number of nature-printed plates. In recent zoology and botany there are many contributions to zoological Anatomy, especially of the lower orders, by Hyrtl and Langer; to Ichthyology by Heckel, Kner, and Steindachner; to Helminthology by Diesing, with one on the same subject by Molin; an entomological paper by Kollar; Schmarda on Egyptian microscopic and other lower animals; Schwartz v. Mohrenstein's Monograph of Rissoidæ; Schmidt's Herpetology of the Cracow Museum; several contributions by Unger to vegetable Physiology and Palæontology; a few systematic botanical papers of Fenzl's in the earlier volumes; Lorenz on *Ægagropila*; Reichhardt on the Anatomy of Fern-stems; Fritz on Thermical Constants for the flowering and fructification of garden-Plants; and Berger on the popular German names of Plants, the latter honoured with more typographical display than the subject, or the manner of treating it, seems to require.

The Proceedings, in octavo, commenced with the Transactions, in two separate series for the two classes. For the Mathematical and Natural Class, under the title of Sitszungsberichte der mathematisch-naturwissenschaftlichen Classe der kaiserlichen Akademie der Wissenschaften, forty-two volumes appeared up to the close of 1860, with copious indexes for each of the first three ten-volumes, and for the last twelve. In 1861 they were further divided into two separate series: the first for Mineralogy, Botany, Zoology, Anatomy, Geology, and Palæontology; the second for

Mathematics, Physics, &c. Of the former, two volumes a year are made up, of two, three, or four parts each. They contain the usual reports of meetings, abstracts of papers, and short papers *in extenso* with a few plates: amongst the latter, in Natural History, Palæontology always takes a large share; there are also several on animal and vegetable anatomy and physiology, and a very few systematic, chiefly ichthyological, by Steindachner or Kner.

In 1847 also a kind of Natural-History publishing Society appears to have been formed at Vienna by W. Haidinger; or, at any rate, the friends and subscribers to his publications had occasional meetings at his house; and, under his editorship, a series of Transactions and Proceedings like those of regular Academies and Societies was commenced. Of the former, in large quarto, with plates, four volumes were published from 1847 to 1851, under the title of Naturwissenschaftliche Abhandlungen gesammelt und durch Subscription herausgegeben von Wilhelm Haidinger. The first volume is continuous, the second and third each in two parts, and the fourth in four parts, each with its separate paging and series of plates, thus complicating references by the necessity of quoting the part as well as the volume. The majority of the papers are physical, chemical, geological, or palæontological. In recent Zoology and Botany there is one by Rossi on Arachnides, by Hammerschmidt on Entozoa and on Mexican Butterflies, by Lobarzewski on some new Mosses, by Reissek on Endophytes of Plant-cells, and two or three on local plants and insects. During the same period of 1847 to 1851 Haidinger published seven volumes of octavo Proceedings, under the title of Berichte über die Mittheilungen von Freunden der Naturwissenschaften in Wien, gesammelt und herausgegeben von Wilhelm Haidinger. They contain nothing worth referring to in Zoology or Botany.

In 1851, when Haidinger's work ceased, a regular Zoological-botanical Society was established, and commenced publishing for each year an octavo volume entitled Verhandlungen des zoologisch-botanischen Vereins in Wien, divided into two parts: Sitzungsberichte or Proceedings, and Abhandlungen or Papers read; each with its separate paging, and accompanied by a few plates. The thirteen volumes we have up to 1863 include fossil as well as recent Zoology and Botany; the entomological papers are numerous; there are also several ichthyological by Steindachner and others, on Batrachia by Fitzinger, on Red Sea Crustacea by Heller, a few notices of the Novara Expedition, and of some birds of the

Vienna Museum; and scarcely anything in Botany, except Massalongo on some Brazilian Lichens, Reissek on the wild Vines of Austria, and Bolle on the Canary-Island *Scrophularias*.

In all the above Vienna publications the memoirs are generally in German, with more or less of Latin for technical characters; in a few instances only, the text is in Italian.

The Academy of Sciences of MUNICH published in the last century ten volumes of quarto Transactions, entitled Abhandlungen der chur-baierischen Akademie der Wissenschaften, with very little of Natural History in them. In 1807 it was reorganized as a Royal Academy in three classes, the Philologic-philosophical, Mathematico-physical, and Historical, and published nine volumes quarto, from 1808 to 1824, entitled Denkschriften der königlichen Akademie der Wissenschaften zu München. The papers are distributed in each volume into the three classes; in the first volume with a continuous paging, but in the subsequent ones with a separate paging for each class. The Natural-History papers in the Mathematico-physical class are not numerous, and many of those palæontological. There are also papers by Tilesius on Brazilian and Japanese Fish and Mollusca, Oppel on *Tanypus*, Schneider on *Gecko*, Spix on Apes, and on the Anatomy of Leeches, and a few of little importance in systematic Botany, by Willdenow in the first volume, and latterly by Schranck, Martius, and Zuccarini, including the first portion of a monograph of American *Oxalides* by the latter. In 1827 the Academy was again reorganized, and it was determined that each class should in its turn make up the yearly volume, thus forming three separate series of Transactions, of each of which a volume should appear every three years. The Mathematico-physical class began; and we have now nine volumes, dated from 1832 to 1863, of the Abhandlungen der mathematisch-physikalischen Classe der königlichen bayerischen Akademie der Wissenschaften; the first three volumes published each at one time, the fourth in two separate parts with separate pagings. Since then, some of the volumes have also been issued at intervals in parts, and latterly separate title-pages are given for each paper, but the paging of each volume is continuous. The volumes of each series have their own numbering; but there is also a continuous numbering for the whole three, reckoned from the commencement of the Denkschriften in 1808. Thus the last or ninth volume of the "Abhandlungen" of the Mathematico-physical Class is also numbered thirty-fourth "in der Reihe der Denkschriften." In the nine volumes, the most numerous papers in Natural

History are A. Wagner's in Palæozoology and on Tropical-American Mammalia. There are also papers in animal Anatomy and Osteology by Erdl, R. Wagner, and H. Rathke, on Entomostraca by Seb. Fischer, and a monograph of Parrots by Wagler. In Botany the chief contributions are Zuccarini's American *Oxalides*, his enumeration of Japanese Plants, his Plantæ novæ et minus cognitæ, and some short morphological papers, Martius's monograph of Erythroxylons, Ledebour on *Pugionium*, Treviranus on the Germination of *Nymphæa*, and a muscological paper of Bruch's. The papers are in German or Latin, and illustrated with well-executed plates.

The Proceedings of the Academy were for many years published in separate sheets in quarto, in two columns, upon very indifferent paper, making up semiannual volumes, under the title of Gelehrte Anzeigen der königlichen bayerischen Akademie der Wissenschaften, each volume at first with separate pagings for the three classes and for the *Bulletin* der drei Classen, but latterly with a continuous paging for the whole volume. The fifty volumes (very thin from 1842 to 1850) from 1832 to 1860 contain little in Natural History beyond proceedings, abstracts, and short communications of temporary interest, except an occasional short botanical paper by Martius, and very rarely any Zoology. In 1860 the Gelehrte Anzeigen were replaced by an octavo publication, entitled Sitzungsberichte der königlichen bayerischen Akademie der Wissenschaften zu München, published in parts forming half-yearly volumes, the three classes mixed; although occasionally short papers are given *in extenso*, and sometimes with plates. We have thus some diagnoses of Central-American Fish by Kner, Martius on the characters of *Cinchona*, Nägeli on the structure of Cell-membranes, and others, so buried in the mass of Physics, Mathematics, Philology, History, &c., that few will care to hunt them out.

Museum Senckenbergianum is the short name adopted for three quarto volumes, published at Frankfort in the years 1834, 1837, and 1845, under the full title of Abhandlungen aus dem Gebiete der beschreibenden Naturgeschichte, von Mitgliedern der Senckenbergischen naturforschenden Gesellschaft in Frankfurt am Main. A few of these papers are palæontological; but the greater number are descriptive in recent Zoology and Botany; the former chiefly by Rüppell, Reuss, Kittlitz, von Heyden, and Kaup, the Botanical by Fresenius, J. G. Agardh, and Schultz-Bipontinus; and almost all relate to the Arabian and Abyssinian fauna and flora

from the collections of Rüppell. In 1854 the same Society began a new series in a somewhat larger quarto, with improved plates, under the title of Abhandlungen herausgegeben von der Senckenbergischen naturforschenden Gesellschaft. Of this we have four volumes, and the first and second parts of the fifth for 1864. They contain many mineralogical, meteorological, and especially palæontological papers, and, in Zoology, chiefly anatomical or osteological by Lucæ, Bruch, Ecker, H. Müller, histological by Mettenheimer, A. Schmidt, and H. Klos, and on insect-development by Weissmann; in Botany, papers by Schacht on vegetable anatomy, Buchenau on inflorescence, various cryptogamic and histological communications by Fresenius, De Bary on Algæ and Fungi, and Mettenius on Ferns.

The Botanical Society of Ratisbon, one of the oldest devoted to one special branch of Natural History, established in 1790, appears from the year 1802 to 1807 to have published six volumes of a Botanische Zeitung, with which I am unacquainted; nor do I believe it to be in any of our Libraries. After that, a long period of wars and political convulsions completely crippled the Society until after the general pacification of 1814, when it was reorganized, obtaining a fixed locale and income, and reverted to the plans of publication it had frequently contemplated. A first volume of quarto Transactions, with a few plates, appeared in 1815, under the title of Denkschriften der königlich-baierischen botanischen Gesellschaft in Regensburg, followed by a second in 1822, a third in 1841, and a fourth, in two parts with separate pagings, in 1859 and 1861 respectively. Besides local subjects, these volumes contain some illustrations of Brazilian plants by Martius and others, a few of Fenzl's papers on exotic plants, a review of the Arctic flora by Ed. Martens; and the last part is entirely taken up by the lichen flora of Bavaria, by A. Krempelhuber. A first part of the fifth volume has been since published, but not yet received in this country. The Society also resumed its botanical Journal, entitled Flora oder Botanische Zeitung der königlich-baierischen botanischen Gesellschaft in Regensburg, in 1818, and has continued it uninterruptedly to the present day, at first under the editorship of Hoppe, and afterwards, during a long period, under that of Fürnrohr. It appeared in Numbers, usually of a single sheet at first, in small post octavo, the first year three times a month, forming one volume, the succeeding twenty-four years, to 1842, four times a month, forming two volumes in each year, but with a continuous paging for

the year as to the regular weekly sheets; to each volume, however, was added a number of sheets of Beilage, Intelligenz-Blätter, Litteratur-Berichte, &c., appearing at irregular intervals, with separate pagings, so as to create some confusion in references, remedied, it is true, in part by good classified indexes to each volume; and some years later a general index to the twenty-five years was given by Hasskarl, the utility of which is not a little marred by the wonderful typographical confusion and hieroglyphics. From 1843 the periodical issue has been continued, but in a somewhat enlarged octavo form, and a greater economy of supplemental sheets, the forty-eight numbers of each year forming one annual volume up to the death of Fürnrohr in 1861. Since then it has been taken up by Herrich-Schäffer, but with a considerable reduction of the number of sheets to each year, only thirty-eight in 1862, but now increasing again to forty or more, and it is announced that the former number of forty-eight will be shortly resumed. In this long series, now consisting of above seventy volumes, there is a large proportion of botanical excursions, reviews of books, personal and other intelligence, and other matter of merely local or temporary interest; but there are also not only original communications in systematic and descriptive Botany, relating especially to the flora of Brazil, the Indian Archipelago, South Africa, &c., by Martius, Blume, Hasskarl, Zollinger, Drège, and others, but much might be gleaned from numerous records of observations in vegetable biology by residents in South Germany and Switzerland. It is announced that Cryptogamy, especially Lichenology, is henceforth to be a prominent feature. Some extra sheets have been given for the last two years, with a separate paging, entitled Repertorium der periodischen botanischen Litteratur, an enumeration of the titles of botanical articles in various transactions and journals, as received by the Ratisbon Society.

Having isolated Botany, the Ratisbon naturalists appear to have considered it logical to associate Mineralogy with Zoology; for they announce nine volumes, or parts, of Abhandlungen der zoologisch-mineralogischen Vereins in Regensburg, which I have not seen; but, judging from their octavo journal, entitled Correspondenzblatt der zoologisch-mineralogischen Vereins in Regensburg of which the Royal Society has nine years, from 1847 to 1855, forming about three volumes, the Zoology is almost limited to that of South Germany, the chief contents being geological.

The Verhandlungen des botanischen Vereins für die Provinz

Brandenburg und die angrenzenden Länder, BERLIN, in octavo, formed thin annual octavo volumes with a few indifferent plates. They have now been somewhat enlarged, and appear in four parts to the volume. The last received is the sixth volume, for 1864, but the greater portion published in the present year. The papers relate chiefly to the local flora; but some noteworthy observations in physiological Botany might be gleaned from them.

The Verhandelungen des naturhistorischen Vereins des preussischen Rheinlandes, to which was afterwards added (from the seventh volume, 1850) und Westphalens, published at BONN, sixteen volumes, octavo, from 1844 to 1859, relate to local Natural History, recent and fossil, Geology, Mineralogy, with a few more general papers in animal and vegetable Physiology, chiefly by Mayer.

The Verhandelungen des naturforschenden Vereins in BRUNN (Moravia), two thin octavo volumes or parts, for 1862 and 1863, include Mathematics, Physics, Geology, &c., the Zoology and Botany relating almost exclusively to the insect fauna and to the flora of the country, with a monograph, by Leonhardi, of Characeæ "considered from a morphogenetic point of view."

The Natural-History Society of DANZIG, founded in 1745, published, in the middle of the last century, three quarto volumes, and again another in 1778, which it is now not necessary to refer to. In 1820 was commenced a new series, entitled Neue Schriften der naturforschenden Gesellschaft in Danzig, of which the Royal Society has five volumes in quarto, with plates, up to 1856, but of which at least one more has been published. The papers have all separate pagings, and were published either separately or two or three at a time in parts. Some are meteorological, physical, or geological; many are zoological, especially in Comparative Anatomy and Physiology, by Rathke and C. T. von Siebold, with some by Menge on Arachnida and on the fauna of the lower orders of the country, with two or three short botanical ones of no importance.

Natural-History Societies appear to have been established in several of the smaller towns in Germany, under the name of *Isis*; but the only one whose publications I have seen is or was at DRESDEN, where a periodical was published in numbers of one or two sheets, forming two annual volumes, large octavo, with a few plates, for 1846 and 1847, entitled Allgemeine deutsche naturhistorische Zeitung im Auftrage der Gesellschaft Isis in Dresden. Besides reviews and miscellaneous notices, it contains original papers in

Physics, Geology, Palæontology, Zoology, and Botany, of very little or no importance; and the publication appears to have ceased with the troubles of 1848.

At Frankfort is also published, under the title of Der zoologische Garten, an octavo monthly journal, forming annual volumes, without plates. This was at first the organ of the Zoological Society of Frankfort, and was edited for four years by Weinland, and devoted almost exclusively to the breeding and education of animals in zoological gardens. The fifth volume, for 1864, edited by Bruch, continues nearly on the same plan, but with the addition of a variety of short communications in general and systematic Zoology.

The Natural-History Society of Freiburg im Breisgau, established in 1821 and reorganized in 1846, published three thin volumes, 1849 to 1853, octavo, without plates, of Beiträge zur rheinischen Naturgeschichte herausgegeben von der Gesellschaft für Beförderung der Naturwissenschaften zu Freiburg im Breisgau, relating, as its title imports, exclusively to the Natural History of the country, chiefly Entomology and Botany, but including Geology and Meteorology. In 1853 they extended their sphere of action to general Natural History, and commenced the publication of Berichte über die Verhandlungen der naturforschenden Gesellschaft zu Freiburg im Breisgau, in octavo, but with improved typography and accompanied by a few plates. Eight parts, forming two volumes, and two parts of a third volume have appeared up to 1864. Besides the fauna and flora of the country, they contain much in Physics and Geology, several papers by Maier in human Physiology and Anatomy, and by De Bary in vegetable Physiology.

The Jahresberichte der Gesellschaft von Freunden der Naturwissenschaften in Gera nebst Nachrichten über den naturwissenschaftlichen Verein in Schleiz, in very thin annual parts, of which the sixth is for 1863, contain papers on the local fauna and flora.

At Giessen in Upper Hesse a Natural-History Society was established in 1846, which has published at intervals of about two years octavo volumes of reports, entitled Berichte der oberhessischen Gesellschaft für Natur- und Heilkunde, in which Zoology and Botany appear to be confined to the local flora and fauna.

The Abhandlungen der naturforschende Gesellschaft in Görlitz, of which six volumes appeared in small octavo from 1827 to 1851, admitted a great variety of subjects, including Antiquities

and Poetry, with local Zoology and Botany and short isolated notices in the Natural History of South Africa, North America, &c., but apparently nothing worth referring to. Since 1855 there have been five volumes in large octavo; two of a similar character to the others, the three others each with single papers on Geology, Agriculture, and Meteorology.

The Naturforschende Gesellschaft in HALLE was originally established, under the influence of J. C. C. Löwe, in 1779, and published an octavo volume of Abhandlungen in 1783, and again two volumes and a part of a third, also in octavo, 1811 to 1817, containing, amongst other matters, a few entomological papers, Nitsche on Cercarias and Bacillarias, Sprengel's Umbelliferæ, and Lehmann on some Boragineæ. In 1853 they commenced Transactions in quarto, to be issued in quarterly parts, forming annual volumes, with much improved typography and plates. The periodical publication, however, was soon abandoned, and the volumes appear irregularly with continuous pagings. The last received is the sixth, dated 1862. Amidst Geology, Mineralogy, Climatology, &c., there are several papers in zoological Physiology and Anatomy, the botanical ones being limited to Irmisch's morphological papers and some long-winded descriptive ones by Schlechtendal.

The Naturwissenschaftliche Verein at HALLE began publishing, at Berlin, in 1848 a Jahresbericht in octavo, in annual volumes, which in 1853 became a monthly Zeitschrift für die gesammten Naturwissenschaften herausgegeben von dem naturwissenschaftlichen Vereine für Sachsen und Thüringen in Halle, edited by G. G. Giebel and W. Heintz, and formed two volumes octavo for each year, the last received being the tenth, for the second half of 1857. The subjects of the papers are chiefly local, with a few more general ones of little importance. In the year 1860 the Society commenced, under the same editorship, Transactions in large quarto, well got up as to typography and plates, under the title of Abhandlungen des naturwissenschaftlichen Vereins für Sachsen und Thüringen in Halle. Of this we have two volumes, dated 1860 and 1861. The papers are doubly paged, for each paper and for the volume, and include several on Palæontology, a long account of South African Diptera by Löw, Giebel on the Osteology of Rodentia, some of Irmisch's papers in botanical Morphology, and some Mathematics.

Of the Abhandlungen aus dem Gebiete der Naturwissenschaften herausgegeben von dem naturwissenschaftlichen Vereine

in Hamburg, quarto, with indifferent plates, there should be, I believe, four volumes. I have only seen the first and third, for 1846 and 1856. They include papers on the Anatomy and Physiology of the lower animals by Stannius, Steinheim, and Wasmann, on Molluscology by Jonas, on Reptiles by R. Schmidt and J. G. Fischer, on Wasps by Möbius, and Sonder's Monograph of *Heliophila*.

The Mittheilungen des Vereins nördlich der Elbe zur Verbreitung naturwissenschaftliche Kenntnisse at Kiel, in thin parts, commenced in 1857, in quarto, in two columns, and has been continued in octavo. It extends to the fourth part, in 1860, and is chiefly geological, with very rarely a zoological paper of little interest.

The Royal Saxon Society of Sciences, divided into classes, publishes Transactions, but with very little of Natural History. The Physical section, entitled Abhandlungen der mathematisch-physikalischen Classe der königlich-sächsischen Gesellschaft der Wissenschaften, Leipzig, six volumes, long quarto, 1852 to 1864, contains only a few papers in physiological and cryptogamic Botany by Hofmeister and by Mettenius. There appears also to have been at Leipzig a special Society for Natural History. We have at least a first volume, quarto, with very indifferent plates, dated 1822, under the double title of Acta Societatis Naturæ Scrutatorum Lipsiensis and Schriften der naturforschenden Gesellschaft in Leipzig. It contains in Zoology and Botany a Monograph of *Scydmænus* by P. W. Müller, Schweinitz on North Carolina Fungi, and a few descriptions of plants from botanical gardens. I have not heard of any further publication of the Society.

The Jahresbericht des naturwissenschaftlichen Vereins für das Fürstenthum Lüneburg zu Lüneburg, octavo, thirteen years to 1864, contains nothing but local Natural History, and very little of that.

The Jahresberichte des Mannheimer Vereins für Naturkunde, nebst wissenschaftlichen Beiträgen, published at Mannheim, in very thin annual parts, octavo, of which the thirtieth is for 1864, contains local Zoology and Botany, mixed in with Astronomy and other physical sciences.

The Schriften der Gesellschaft zur Beförderung der gesammten Naturwissenschaften zu Marburg, four volumes, octavo, with a very few plates, 1823 to 1839, contain some long speculative papers by Ritgen and others, on garden plants by Wenderoth, and a variety of others of very little interest.

The Archiv des Vereins der Freunde der Naturgeschichte in Mecklenburg, in annual parts, octavo, with a very few plates, edited by E. Boll at NEUBRANDENBURG, had come to its fifteenth year in 1861; and systematic and alphabetical indexes are given for the first ten years. It contains numerous papers on the geology, fauna, and flora of Northern Germany.

The Jahresberichte der Pollichia eines naturwissenschaftlichen Vereins der Rheinpfalz, published at NEUSTADT AN DER HAARDT, in small octavo, with a very few indifferent plates, relate chiefly to the flora, and occasionally to the insect fauna of the country; but they contain also some of Schultz-Bipontinus's papers on Compositæ. One rather thick part or volume is devoted to a description by P. J. Müller of Weissenburg of 232 Brambles from the Palatinate and neighbouring districts. The last part received is the nineteenth year for 1861.

The Abhandlungen der naturhistorischen Gesellschaft zu NÜRNBERG, of which the Royal Society has one volume octavo, 1852, amidst a variety of matter, contain a very little local Zoology and Botany, and an enumeration of Chilian Ferns by J. W. Sturm.

The Berichte des Offenbacher Vereins für Naturkunde über seine Thätigkeit nebst Abhänge wissenschaftliches Inhaltes, OFFENBACH, five thin parts, octavo, 1860 to 1864, contain a few short contributions in Zoology and Botany, on the Cuckoo, on the local flora, &c., with a few plates, of which six are devoted to the Batrachian *Ranunculi*.

The Bohemian Society of Sciences, established at PRAGUE in 1784, published four short series of quarto Transactions in the end of the last and early part of the present century, to which there appears no occasion to refer. A fifth series was commenced in 1837, and continued slowly to the thirteenth volume, which has just appeared in quarto with a very few plates, under the title of Abhandlungen der königlichen böhmischen Gesellschaft der Wissenschaften. The changes in the internal arrangement have been continual—at first the papers indiscriminately following each other, each with a separate paging, but arranged in the Contents in two classes, Physikalisch-mathematische, and Historisch-philologische, then the papers following without order but with a continuous paging, and sorted in the index into five classes, then again forming two or three separate parts in each volume. The volume for some time contained a few Natural-History papers, chiefly speculative, by Haidinger, entomological by Fieber and by

Kolenati, on *Lepidosiren* by Hyrtl, and several botanical ones by Presl, amongst others his Botanische Bemerkungen and Epimeliæ Botanicæ, in which he inundated the science with changes of names and bad species and genera, and, moreover, dated his papers two years before they were actually published. The later volumes contain nothing in our sciences.

The Verhandlungen des Vereins für Naturkunde zu PRESBURG, five thin octavo volumes, 1856 to 1861, include Mathematics, Physics, &c., and nothing in Zoology or Botany beyond the fauna and flora of the country.

The Natural History Society of RIGA published for thirteen years, from 1846 to 1863, a Correspondenzblatt des naturforschenden Vereins zu Riga, the Numbers for each year forming very thin annual parts, and consisting of Proceedings and short communications, with very little of Zoology or Botany. In 1848 was published also a first volume, octavo, with a few plates, of Arbeiten des naturforschenden Vereins zu Riga, in which is Bunge's enumeration of Lehmann's Siberian Plants, as well as some entomological papers by Gimmerthal.

The Entomological Society of STETTIN, apparently in imitation of some of the German botanical periodicals, publishes two journals: 1, the Entomologische Zeitung herausgegeben von dem entomologischen Vereine zu Stettin, at first in monthly parts, very small octavo, of one sheet each, but latterly in quarterly parts of a larger octavo, making an annual volumes of 400 to 500 pages, of this we have twenty-two, from 1840 to 1861; and 2, Linnæa, entomologische Zeitschrift herausgegeben von dem entomologischen Vereine zu Stettin, in octavo volumes of 300 to 400 pages, with occasionally one or two plates, of which we have fourteen volumes, from 1846 to 1860.

The Württembergische naturwissenschaftliche Jahreshefte, edited by Mohl and others, at STUTTGART, in thin annual volumes, octavo, small type, with a few plates, contain a great deal of Geology and Palæontology, Physics, &c., some local Botany and Zoology, especially Entomology, a few physiological and speculative papers, descriptions of two or three Cape animals by Rapp, and a short paper on the Ornithology of Greece by Landbeck. The series is now in its twenty-first year, and general indexes of authors and subjects for the twenty years have been just added.

The Naturwissenschaftliche Abhandlungen herausgegeben von einer Gesellschaft in Würtemberg at TÜBINGEN, two volumes, octavo, 1827 and 1828, only contain two biological papers, both

in vegetable Physiology one by C. R. Gärtner, the other by F. G. Gmelin.

The Jahrbücher des Vereins für Naturkunde im Herzogthum Nassau, at WIESBADEN, in octavo, commenced in 1844, with a part or volume for every year, and extend in our library to the sixteenth for 1861. They comprise papers on Physics, Mineralogy, Geology, Palæontology, &c., with several on the fauna and flora of the country, especially entomological, by Schenck and others.

The Würzburger naturwissenschaftliche Zeitschrift, herausgegeben von der physikalisch-medicinischen Gesellschaft at WÜRZBURG, was commenced in 1860, in octavo, with plates, three or four parts forming each volume, of which the fifth was completed in 1864. It contains physical, geological, and palæontological papers, and in Zoology and Botany chiefly anatomical (by Kölliker, Claus, and others) or histological. A few zoological and botanical papers, chiefly physiological, are also contained in the Verhandlungen der physikalisch-medicinischen Gesellschaft in Würzburg, large octavo, ten volumes.

I have met also with references to Reports of Proceedings, Journals, or Transactions, published by Natural-History Societies at ALTENBURG, ANHALT in DESSAU, AUGSBURG, BAMBERG, BLANKENBURG, CASSEL, CREFELD, DORPAT, ELBERFELD, EMDEN (Jahresberichte und kleine Schriften ; I have only seen the former without the papers), HANAU, HANNOVER, HEIDELBERG, KLAGENFURT, and MAJA, which are otherwise unknown to me.

There are also numerous scientific Societies in Germany which, without professing to deal specially with Natural History, occasionally include zoological or botanical papers in their Transactions, especially medical, agricultural, and horticultural Societies. Among the latter the Prussian Society will be alluded to further on, under Horticultural Periodicals.

2. *Journals not connected with Scientific Societies.*

Before the great French revolution had overrun Germany, producing a general disorganization of scientific enterprise, several natural-historical, and especially botanical periodicals, had been attempted, and some of them had obtained circulation even in this country, and are still occasionally quoted, especially for the European flora. The principal ones, more or less known to me, chiefly on the old unsightly German paper, with a few very indifferent plates, are the following :—

In general Natural History and Zoology—

Magazin für das Neueste aus der Physik und Naturgeschichte, edited at GOTHA, at first by Lichtenberg, and afterwards by Voigt, eleven volumes, small octavo, and one of index, 1781 to 1799, continued at Jena and afterwards at Weimar by Voigt, in twelve volumes, 1797 to 1806, under the title of Magazin für den neuesten Zustand der Naturkunde, mit Rücksicht auf die dazu gehörigen Hülfswissenschaften, contains, amongst a variety of matter, short zoological original communications, and a very few botanical ones.

Der Naturforscher, HALLE, seven volumes, octavo, 1777 to 1780, Höpfner's Magazin für die Naturkunde, ZÜRICH, four volumes, octavo, 1787 to 1789, and Scriba's Journal für die Liebhaber der Entomologie, FRANKFORT, three parts, 1790 and 1791, neither of which have I seen.

Meyer's zoologische Annalen, WEIMAR, 1794, one volume, octavo, for 1793, is chiefly a summary of the zoological progress for that year, and does not appear to have been continued.

Wiedemann's Archiv für Zoologie und Zootomie, five volumes, octavo, BERLIN, 1800 to 1806, contains many original papers by Wiedemann, Schröter, Illiger, Schelver, and others, besides extracts and translations from English and French publications.

Weber and Mohr's Beiträge zur Naturkunde, one volume, small octavo, KIEL, 1805, contains a few papers in Botany, Entomology, and Mineralogy.

In Botany, either exclusively or chiefly—

Ehrhart's Beiträge zur Naturkunde und den damit verwandten Wissenschaften, seven volumes, small octavo, HANOVER and BRUNSWICK, 1787 to 1792. A few chemical and medical papers are mixed in with the botanical ones.

Römer and Usteri's Botanisches Magazin, or Magazin für die Botanik, twelve parts making four volumes, small octavo, ZÜRICH, 1787 to 1790.

Usteri's Annalen der Botanick, six parts, small octavo, ZÜRICH, 1791 to 1794, and Neue Annalen der Botanick (afterwards Botanik), fifteen volumes or parts, small octavo, ZÜRICH, afterwards LEIPZIG, 1795 to 1797, the latter series also called volumes 7 to 21 of the Annalen.

Römer's Neues Magazin für die Botanik in ihrem ganzen Umfange, one volume, small octavo, ZÜRICH, 1794, and Archiv für die Botanik, three volumes, small quarto, 1796 to 1805.

Schrader's Journal für die Botanik, ten parts, small octavo,

Göttingen, 1799 to 1803, and Neues Journal für die Botanik, eight parts in four volumes, 1805 to 1810.

The following are the principal Zoological and Botanical Journals now being carried on in Germany under private editorship:—

The Linnæa, ein Journal für die Botanik in ihrem ganzen Umfange, in small octavo, with a very few plates, was established by Schlechtendal at Berlin in 1826, and, moving with him to Halle in 1833 or 1834, has continued under his editorship and, I believe, proprietorship to the present time. It appears in parts, of which about six make a volume, and it was intended at first that the volumes should correspond to the year, but having, after some years, got into arrear, the attempt at absolute regularity in issue was given up, without losing sight altogether of the original plan of about a volume a year. It consists chiefly of systematic and descriptive papers; and from the first, when the editor, in conjunction with Chamisso, commenced the publication in it of the results of the voyage round the world of the latter botanist, to the present day, there has been much of considerable value which we have frequent occasion to refer to. It also contained bibliographical notices, which were at first given at the end of each part, with a continuous paging; then, from the third volume (1828) to the sixteenth (1842), they were separated by a distinct paging, title-page, and index for each volume, under the name of Litteraturberichte der Linnæa. With the seventeenth volume (1843) the bibliographical articles were discontinued, being reserved for the Botanische Zeitung; and to the old title of Linnæa was added the second one of Beiträge zur Pflanzenkunde, of which this was the first volume. This seems to be a useless complication; for the work is always quoted as the Linnæa, and the double title and numbering of volumes, if noticed at all, only creates confusion. It is now, after thirty-nine years, in the thirty-fourth volume, or eighteenth of the Beiträge. Each volume has a table of contents and index of names.

With the above-mentioned change in the Linnæa (in 1843) a separate botanical Journal was commenced, something after the plan of the Ratisbon Flora, under the editorship of Mohl and Schlechtendal, at Berlin. It appears in weekly numbers of one sheet each, with occasionally an additional half sheet, and now and then a plate, each year forming a volume in foolscap quarto, in two columns, on thin paper; each volume, like the Flora, has a classified index. In the first fifteen years the

columns were numbered as pages; from the sixteenth (1858), it is the pages only of two columns that are numbered. The Journal still appears regularly, and is now in its twenty-third year. Besides reviews, bibliographical notices, and botanical intelligence, there are original articles, occupying perhaps on an average the half of each number. These are more generally physiological than systematic or descriptive; but there are frequently also short articles of the latter class, and for the last two years papers too long to be broken up into the weekly numbers are given in extra sheets with separate pagings. To meet the extra expense of these additions, as well as of the increased number of plates now given, the subscription price has been lately raised.

Wiegmann's Archiv für Naturgeschichte, octavo, with good plates, was commenced in 1835 at Berlin, in parts, forming two volumes for each year. In the first year, the reports on the progress of Zoology and Botany were mixed up with the original papers in each volume, but from the second year the first volume of each year is devoted to original papers, and the second to the reports. This important Journal was edited by Wiegmann until his death in 1841, its seventh year. It was then continued by Erichson, and, on his death in 1848, by Troschel, who still carries it on, and who has given also general indexes of names of authors and of subjects of the original papers of the first twenty-five years. The last part received is the fourth of the thirtieth year (1864). The original papers of the series are chiefly zoological, descriptive as well as physiological; the few botanical ones are generally physiological; the annual reports on the progress of the different branches of science during the preceding year are most valuable, and, I believe, well kept up in all the different branches of Zoology. In Botany, although so well commenced by Meyen and others, they have unfortunately not been continued, probably owing to Beilschmied's translations of the Swedish ones above mentioned. But these have long since ceased, and it were much to be desired that they might be again taken up by some German compilers, who have great facilities for carrying out works of the kind at a moderate cost. Still more satisfactory would it be to us, if, now that zoological reports of the kind have been undertaken in this country under the direction of Dr. Günther, some of our own botanists would render the same service to Botany.

Siebold and Kölliker's Zeitschrift für wissenchaftliche Zoologie, Leipzig, octavo, in parts, of which four make a volume for

each year, with numerous plates, is limited to zoological Physiology and Anatomy, to the express exclusion of systematic and descriptive papers. It commenced in 1851, and is now in its fifteenth annual volume for 1865.

Pringsheim's Jahrbücher der wissenchaftlichen Botanik, Berlin, afterwards Leipzig, large octavo, with plates, begun in 1857, in quarterly parts, of which four were to form an annual volume, are still however only in their fourth volume. This work also is specially destined for Physiology and Anatomy. Systematic and descriptive Botany are only admitted for microscopic plants or algæ, and others of the lower orders of cryptogams, with the sole exception of Caspary's paper on *Hydrilla*.

In both the above publications we regret to see currency given to a mischievous misuse of the word *scientific*, now prevalent among many Germans—mischievous in its tendency to cast a slur upon system and methodical description as necessarily unscientific, although they had only become so at the close of last century, by a misinterpretation of Linnean principles now happily better understood. If the study of the phenomena of life may lead to higher results than that of outward form and structure, the one cannot be carried on without the other, and if microscopical structure is more difficult to observe than that which is visible to the naked eye, the one is not more important than the other. Physiological differences in living beings are more or less correlative to differences in form and structure; and to have clear ideas in relation to them the subjects of observation must be accurately identified and judiciously classed; and, on the other hand, no description or system is good unless physiology and structure are taken into consideration as well as outward form. Speculations therefore in biology, without an accurate knowledge of individuals and systematic affinities, or microscopic observations unchecked by what can be ascertained without the aid of the instrument, are surely as unscientific as the rude systems of mere collectors where outward visible form alone is considered.

Skofitz's Œsterreichisches botanisches Wochenblatt, at Vienna, formed seven annual volumes, octavo, from 1851 to 1857, and has been continued, from 1858, under the title of Œsterrreichische botanische Zeitschrift, now in its eighth volume. It contains botanical bibliography and intelligence, papers on Horticulture and local Botany, and occasionally short monographs or other articles on general Botany, descriptions of new plants, &c.

Cabanis and Baldamas's Journal für Ornithologie, published at

Cassel, in octavo, with a few plates, is now in its thirteenth annual volume.

Hedwigia, ein Notizblatt für kryptogamische Studien, nebst Repertorium für kryptogamische Litteratur, Dresden, octavo, ten numbers to 1864, is unknown to me.

The following, although comparatively modern, have now, I believe, all ceased to appear.

Oken's Isis had for a short time a very considerable reputation in Germany as a general Journal of Natural History and the organ of his peculiar views. It was published in quarto numbers, in two columns, on old German paper, forming annual volumes with literary supplements, and was continued for thirty-two years, from 1817 till the close of the author's life in 1848, or soon after. The subjects are chiefly of temporary interest, reviews, abstracts, short notices, and scientific intelligence; but there are also a few short original papers in Zoology and Botany, and occasionally a few plates of indifferent execution.

Flörke's Repertorium des Neuesten und Wissenswürdigsten aus der gesammten Naturkunde, five volumes, octavo, with a few plates, Berlin, 1811 to 1813, consists almost entirely of abstracts or translations of papers elsewhere published.

Froriep's Notizen aus dem Gebiete der Natur- und Heilkunde, Weimar, quarto, in two columns, with a few plates, was published in numbers, forming 101 thin volumes, in three series, 1822 to 1848. Each number is divided into two parts, for Natural History and Medicine. The work consists in a great measure of translations, abstracts, reviews, and intelligence; but also includes a few short original zoological and botanical papers, chiefly physiological, and of little importance.

D'Alton and Burmeister's Zeitung für Zoologie, Zootomie und Palæozoologie, was commenced at Leipzig in January 1848, in quarto numbers, in two columns, of one or two sheets each; but after being carried on to the twenty-sixth number in September of the following year, it was dropped for want of support. It consists of original papers and bibliographical notices.

Germar's Magazin der Entomologie, four volumes, octavo, with a few plates, Halle, 1813 to 1821, contains original papers, as well as reviews and abstracts. His subsequent series, Zeitschrift für die Entomologie, three volumes, Leipzig, 1839 to 1841, chiefly consists of original entomological descriptive papers.

Of Gistl's Faunus, Zeitschrift für Zoologie und vergleichende Anatomie, there appear to be only three thin octavo volumes, Mu-

NICH—the first two dated 1832 and 1855, and the third, called the first of a second series, 1837: they contain a few original papers, with several extracts and abstracts.

Gistel's Vacuna, oder die Geheimnisse aus der organischen und leblosen Welt, two volumes, octavo, STRAUBING, 1857, with a great deal of irrelevant matter, contains some papers on the local flora, and some of Gistel's own in Entomology.

Sprengel, Schrader, and Link's Jahrbücher der Gewächskunde, three parts forming one volume, octavo, BERLIN, 1820, besides translations and abstracts, contain a few original papers by Swartz, Link, Treviranus, Ehrenberg, and Sprengel.

Sprengel's Neue Entdeckungen im ganzen Umfang der Pflanzenkunde, three volumes, foolscap octavo, with a few plates, LEIPZIG, 1820 to 1822, consists chiefly of reviews, abstracts, and extracts, but contains also a few original papers of his own, and one by Trinius.

Rabenhorst's Botanisches Centralblatt is unknown to me.

Seemann's Bonplandia, Zeitschrift für die gesammte Botanik, published at BONN, in separate numbers of about a sheet each, forming annual volumes, long quarto, in two columns, was commenced in 1853. It contains, besides bibliographical notices and botanical intelligence, short original papers in descriptive as well as physiological Botany, but exceedingly difficult to find, the preparation of the indexes to each volume having been unfortunately left to some ignorant compiler, who has resorted to the most ingenious contrivance for rendering them useless: the alphabetical arrangement is neither that of subjects nor of authors, but of the first word of the titles of the articles, whether it be an article, a preposition, or a noun. The Journal was carried on to the tenth year (1862), when it ceased, after having in the last volumes commenced giving a few plates.

The German Horticultural periodicals are numerous, but most of them of mere temporary or local interest. A few, however, contain botanical papers or descriptions which we are compelled to take notice of. The most important are the following:—

The Verhandlungen des Vereins zur Beförderung des Gartenbaues in den königlichen preussischen Staaten, at BERLIN, contain reports of the Society's Meetings, with a few papers read, occasionally botanical, and a very few plates of new plants. The first series is in twenty-one volumes, quarto, 1830 to 1853, followed by a second in octavo, seven volumes, 1853 to 1859, when the work appears to have been given up, having been replaced by

K. Koch and Fintelmann's Wochenschrift für Gärtnerei und Pflanzenkunde, quarto, in two columns, which has formed annual volumes since 1858, and is still carried on.

The Hamburger Garten- und Blumen-Zeitung, published at Hamburg, in monthly parts, octavo, forming annual volumes with a few plates, is now in its twenty-first year. It was commenced in 1845 as Neue allgemeine deutsche Garten- und Blumen-Zeitung, under the editorship of R. Mettler, continued by Otto from the fourth volume (1848), and changed its name to Hamburger Garten- und Blumen-Zeitung with the seventh volume, 1851. It frequently contains short botanical papers, especially descriptions of new plants.

Regel's Gartenflora, Monatschrift für deutsche und schweizerische Garten- und Blumenkunde, was commenced at Erlangen in 1852, in monthly numbers, octavo, with coloured plates, in some measure in imitation of our periodicals of the kind, but often very inferior in execution. It still continues to be dated from Erlangen, although the editor has been for several years Director of the Botanic Garden of St. Petersburg. It is now in its fourteenth year, and contains numerous descriptions of garden species, supposed to be new, although many unfortunately will not bear the test of a close examination. This leads one to suspect that Regel himself, who in other works has shown a sound appreciation of the value of species, may not have so mnch to do with the details of this one as his name on the title-page would imply.

Baron Hügel commenced at Vienna, in 1837, a Botanisches Archiv der Gartenbaugesellschaft der österreichischen Kaiserstaaten, in octavo, with coloured plates, to be issued monthly, in close imitation of our Botanical Magazine, but it was never continued beyond the second part.

XI. Switzerland.

The General Swiss Natural History Society published a first volume in quarto, in two parts, dated at Zurich, 1829 and 1833, of Denkschriften der allgemeinen schweizerischen Gesellschaft für die gesammte Naturwissenschaften. The papers it contains are chiefly geological; the only biological contribution is a short one by De Candolle on *Fatioa*. This volume was followed in 1837 by a new series, entitled Neue Denkschriften, &c., also with the French title of Nouveaux Mémoires de la Société Helvétique des Sciences Naturelles, of which we have now eighteen volumes, the

first ten, 1837 to 1849, published at NEUCHATEL, the eleventh to the eighteenth, 1850 to 1861, at ZÜRICH. They contain a great deal of interesting palæontological and geological matter by Heer and others, much of geology, long papers on the Swiss fauna and flora, a few more general entomological and physiological memoirs, one on the Radiata and Worms of Nice by Ed. Graeffe, two by De Candolle, on Monstrosities and on *Gærtnera*, and J. Mueller's monograph of Resedaceæ. There are separate pagings for the different papers, which are in the French or German language, with more or less of Latin for the technical parts.

The Mémoires de la Société de Physique et d'Histoire Naturelle de GENÈVE, quarto, with very fair plates, commenced rather earlier than those of the general Swiss Society, the first volume being dated 1821, and the volumes succeeding each other pretty regularly to the twelfth in 1849. Since then there have appeared but five, the last received being the seventeenth, dated 1863, but published in 1864. Physics, Geology, and vegetable and animal Physiology, including Claparède on the fecundation of Nematodes, occupy a considerable portion. There are also several important monographs and other memoirs in systematic Botany by De Candolle and his friends and pupils Duby, Choisy, Moricand, and Coulter, a Flora of Zanthe by Margot and Reuter, and some papers on Mexican Crustacea, Myriapods, and Insects by H. de Saussure.

The well-known Bibliothèque Universelle of Geneva, now in its seventieth year or twenty-fourth volume of the present series, octavo, in its scientific portion, although chiefly physical, contains frequently zoological and botanical reviews and intelligence, and occasionally an original paper, especially in the speculative or theoretical branches of these sciences.

At LAUSANNE, from a cantonal section of the Société Helvétique des Sciences Naturelles, gradually arose the Société Vaudoise des Sciences Naturelles, which, from 1842, has published a regular Bulletin des séances de la Société, &c. in octavo, with occasional plates. It is now in its eighth volume. The papers are chiefly in Physics, Geology, and Palæontology; the few in Zoology and Botany are of little beyond local interest.

The Verhandlungen der naturforschenden Gesellschaft in BASEL, in octavo, commenced in 1857, and are now in their fourth volume. The few zoological and botanical papers are again of scarcely any but local interest.

Professor F. Meisner published at BERNE in 1824 two small vo-

lumes, foolscap octavo, of Annalen der allgemeinen schweizerischen Gesellschaft für die gesammten Naturwissenschaften, containing in zoology and botany a few speculative and physiological papers, and some on the local flora and fauna of very little importance.

The Society of Naturalists of BERNE, at first a cantonal section of the Société Helvétique des Sciences Naturelles, began publishing in 1843, as an independent Society, Mittheilungen der naturforschenden Gesellschaft in Bern, in octavo, in separate numbers, forming thin annual volumes, of which there are twenty-two from 1843 to 1864, with a very few plates in the latter ones and a general index for the years 1843 to 1854. The papers are chiefly in Physics; the Zoology and Botany are entirely local, except a few morphological contributions of Wydler's, and Shuttleworth's paper on the Mollusca of the Canary Islands, &c.

The Société des Sciences Naturelles de NEUCHATEL was founded in 1832, and have published four volumes of Transactions, large quarto, with plates, 1835 to 1859, containing, besides Geology and miscellaneous subjects, some zoological papers, especially on the Anatomy of *Salmones*, by Agassiz and Vogt, and other papers of Agassiz, a classification of Batrachia by Tschudi, &c., the few in Botany relating to the mosses and other plants of Switzerland. The Bulletin of the same Society, five volumes, octavo, 1844 to 1861, contains, amidst a great variety of matter, very little of Zoology (chiefly short communications and extracts by the President, L. Coulon) and still less of Botany.

The Natural-History Society of ZÜRICH commenced in 1847 publishing monthly numbers, forming thin annual octavo volumes, of Mittheilungen der naturforschenden Gesellschaft in Zürich, which continued till the tenth year (1856), and were followed by quarterly parts, entitled Vierteljahresschrift der naturforschenden Gesellschaft in Zürich, edited by R. Wolf. Notwithstanding the title, the papers are chiefly mathematical, physical, or chemical, with a few zoological, including physiological contributions from Kölliker, and conchyliological by Mousson, &c.; and scarcely any botanical, and those of no importance. The last I have seen is the eighth year (1863).

I have met also with references to Jahresberichte of Natural-History Societies at CHUR in the Grisons and at ST. GALLEN, neither of which have I seen.

XII. FRANCE.

The old Académie des Sciences of PARIS had, in the latter half of the seventeenth century, and during the eighteenth century,

published about 130 quarto volumes of Histoire and Mémoires, when it was suppressed in the great French Revolution. Reestablished a short time afterwards as a class of the National Institute of Sciences and Arts, it issued, under the Republic and Empire, from the an vi. (1798) to 1815, fifteen volumes of Mémoires de l'Institut National des Sciences et Arts, Sciences Mathématiques et Physiques, including a few Natural-History papers by Cuvier, Lacépède, Ventenat, Desfontaines, and others. In 1815 the Institute was again reorganized, and the old name of Academy of Sciences restored to the Mathematico-physical branch, and two new series of quarto Transactions were commenced. Of the one, entitled Mémoires de l'Académie des Sciences de l'Institut (with or without the epithet of Royal or Imperial, according to the political atmosphere of the day) de France, we have thirty-three volumes up to 1864; of the other, the Mémoires présentés par divers savants a l'Académie (Royale or Impériale) des Sciences de l'Institut de France, seventeen volumes to 1862. In this long series the Natural-History papers scarcely average above one in every two volumes; and although two or three of the more important ones, each occupying the whole, or nearly the whole, of a volume, may be considered as so many independent works published under the sanction of the Academy, yet it is to be regretted that the shorter ones should be thus, here as in other cases, buried in the mass of the more abstruse sciences into which the naturalist cannot enter. With the exception of two unimportant papers in the earlier volumes, Ramond on the Vegetation of the Pic du Midi and Delile on *Benincasa*, and of Duméril's classifications of Fish, Reptiles, and Insects, the whole of the zoological and botanical memoirs in these volumes relate to animal and vegetable Anatomy and Physiology; the zoological ones (in chronological order) in the Mémoires de l'Académie by Flourens, Geoffroy de St. Hilaire, Milne-Edwards, Breschet, Duvernoy, De Serres, and Quatrefages; and in the Mémoires de divers savants by Duvernoy, Léon Dufour, Baudrimont, Martin de St. Ange, Robineau-Desvoidy, Breschet, Dugès, Cortes, Bourguignon, and Lereboullet; the botanical in the Mémoires de l'Académie by Mirbel, Dutrochet, A. de St. Hilaire, Turpin, Mirbel, and Payen; and in the Mémoires de divers savans by Couverchel, C. H. Shutz, Gaudichaud, Payen, Duchartre, and W. R. Schimper.

The full reports of the weekly meetings of the Academy, so well known under the name of Comptes Rendus hebdomadaires des Séances de l'Académie des Sciences, in a small quarto form, com-

menced in 1835, forming two volumes in each year, and are now in their sixtieth volume.

The greater number, however, of the Natural-History papers of the French Academicians, especially during the first half of the present century, appeared in the several series issued under the authority of the Jardin des Plantes, which it were much to be wished were more actively continued, as the receptacle for all important memoirs on these subjects requiring quarto illustrations. The first of these series, entitled Annales du Muséum National d'Histoire Naturelle par les Professeurs de cet établissement, was in twenty volumes, quarto, with numerous plates, 1802 to 1813, the epithet National being dropped with the sixth volume, 1805, never to be resumed by the editing Professors, who have even disdained the adjuncts of Royal or Impérial. The second series, also in twenty volumes, appeared as Mémoires du Muséum d'Histoire Naturelle par les Professeurs de cet établissement, extended from 1815 to 1832, since when a third series, entitled Archives du Muséum d'Histoire Naturelle par les Professeurs-Administrateurs de cet établissement, has been dragging on its broken life through nine volumes and a half in thirty years, none having appeared since the second part of the tenth volume in 1861. These fifty volumes include Mineralogy and Geology, but comprise also in Zoology and Botany many of the most important contributions of the most eminent French naturalists, especially systematic and structural, with a few physiological ones; and the illustrations, especially some of those of the Archives, as for instance Adrien de Jussieu's Malpighiaceæ, may well be given as models in point of design and execution.

A Natural-History Society appears to have existed in Paris from the year 1770, although perhaps never regularly constituted till 1788; and the first publication was not till 1792, when a thin folio was issued entitled Actes de la Société d'Histoire Naturelle de Paris. Stopped for a time by the political convulsions of the day, it made another attempt in the an vii. (1799), and produced a thin quarto under the title of Mémoires de la Société d'Histoire Naturelle de Paris, and was again silent until 1823, when, ignoring the former volume, and without any indication of its being a new series, it began again with a first volume with the same title of Mémoires de la Société d'Histoire Naturelle de Paris, and carried it on to the fifth volume in 1834, when it appears to have expired. These volumes contain, besides geological, palæontological, chemical and other contributions, a few entomolo-

gical and malacological, some in zoological Anatomy and Physiology, by Milne-Edwards, &c., and several botanical monographs and other descriptive papers, in the Actes by the elder Richard, in the single quarto by De Candolle and others, and in the five volumes by several modern botanists, including De Candolle, Walker-Arnott, Achille Richard, Choisy, Laharpe, J. Gay, &c.

During this intermittent career of the Société d'Histoire Naturelle another one was started in 1820 under the name of Société Linnéenne de Paris, and claimed to be the original one, which it is stated was established in 1788 under that name, and only changed it in 1790 to Société d'Histoire Naturelle in deference to some anti-Linnæans, who were then amongst its leading members. However that may be, this new or old Linnean Society commenced in 1822 annual volumes in octavo, with plates in quarto, of Mémoires de la Société Linnéenne de Paris, and carried them on through five volumes, and a portion of the sixth, to 1827. With the original papers were also reports of Proceedings, Programmes, Biographical notices, &c., with separate pagings; and the two together bore on the temporary covers the title of Annales de la Société Linnéenne de Paris, under which the work is sometimes quoted, but it is more generally known as Mémoires. It contains a few entomological and other zoological papers; but the principal ones are botanical, including Dumont d'Urville's Oriental Plants, several of Desvaux's Monographs, Rapin's Plantagineæ, &c. I have not seen the second volume, which is deficient in both the copies I have consulted.

The Entomological Society founded at Paris in 1832 immediately commenced publishing Transactions, in parts, forming annual volumes, in octavo, with plates, which, rather indifferent at first, have gradually improved and are now very good. This work, entitled Annales de la Société Entomologique de France, still continues, and has been broken up into several series. After the eleventh volume (1842) a change was made in the editorship, and a second series commenced, extending, in ten volumes, to 1852; the third series has eight volumes to 1860; and the fourth series, now in its fourth volume, commenced in 1861, in a new, more compact type and on improved paper, so as to reduce the thickness of the volume, which had become unwieldy. The papers are exclusively entomological, and chiefly systematic and descriptive.

The Société Impériale Zoologique d'Acclimatation, established in the Bois de Boulogne at Paris in 1854, publishes a Bulletin in

octavo, in parts, forming annual volumes. They relate chiefly to the education, introduction, and so-called acclimatization of animals, but contain also papers on animal physiology, geographical distribution, &c. There are nine volumes complete from 1854 to 1862.

In 1854 also an entirely new Society was formed by the leading botanists of Paris, strictly limited to Botany, but on an extensive scale, its permanent abode and meetings for the greater part of the year being in Paris; but every summer it meets for a week at some provincial town or other locality of botanical interest, to be changed every year. The Society immediately began publishing a Bulletin de la Société Botanique de France, in large octavo, and small type, but without plates, in parts, forming annual volumes. It is now in its twelfth; the issue, however, has been very irregular, often appearing long after the dates assigned; and the titles and indexes to several of the last volumes have not yet been received. A large portion is occupied by bibliographical notices, not the less useful from criticism being rigidly excluded, and by long reports of the meetings, often of temporary interest only. As, however, the most eminent French botanists take a part in the proceedings, the reports often include short papers *in extenso*, and records of facts and observations, in physiological as well as in structural and systematic Botany, of considerable importance.

Lamarck and others at Paris commenced in 1792 a Journal d'Histoire Naturelle, published in parts, in octavo, with plates; but, after completing two volumes in the course of the year, it came to an end in the disorders of the Revolution. It contains some good papers in various branches of Natural History.

It was not until the year 1824 that it was replaced by the Annales des Sciences Naturelles. This important periodical was then commenced under the editorship of Adolphe Brongniart and others, appearing in monthly numbers, forming in each year three volumes octavo of text, with a few quarto plates, intended to be separately bound up. It was carried out on the same plan through a first series of thirty volumes or ten years, to 1833, comprising geological and mineralogical papers as well as Zoology and Botany. In 1834 a second series was commenced on an improved plan: Mineralogy and Geology were altogether rejected; and Zoology and Botany were separated into distinct sections, each with its own paging, title, and indexes; at the same time the plates were reduced to the somewhat enlarged form adopted for the text.

And in this form it has continued till now, at first endeavouring to issue a part for each month, half Zoology and half Botany, forming two volumes for each year; but the parts having gradually got much in arrear, and one branch having had often to wait for the other, the custom of assigning a specific month for each issue has been discontinued; the Zoology and Botany generally appear separately at irregular intervals; but six parts continue to form a volume, and a new series is commenced after every twenty volumes; copious indexes, both of subjects and of authors, being given to every volume as well as to every series. It is now in the third volume of the fifth series, or ninety-third of the whole work. Besides occasional reviews or translations, it contains throughout many most valuable original papers in every department of both sciences, with the great advantage that neither the zoologist nor the botanist has to encumber his shelves with what does not relate to his own branch.

De Férussac's useful Bulletin for four years previous to 1824 included all sciences in one publication; but in that year a division was made into eight separate series, published in numbers, forming one or two annual volumes, octavo, for each series. The Bulletin des Sciences Naturelles et de Géologie was carried on through twenty-six volumes, from 1824 to 1831. Although chiefly consisting of bibliographical notices, abstracts, and intelligence, it also contained occasionally short communications, both in Zoology and Botany, not elsewhere published.

The Magasin de Zoologie, conducted by Guérin-Méneville, was commenced in 1831, to be issued in monthly parts, forming two or three annual volumes, octavo, with numerous plates. The parts, however, were very soon much in arrear; and after the first two years only one volume was ascribed to each year, and in 1839 a new series was commenced with the enlarged title of Magasin de Zoologie, d'Anatomie comparée et de Paléontologie, on the same plan of an annual volume in six parts. This Magazine admitted only original papers, but a bulletin was occasionally added; and from 1838 the same editor published a monthly Journal, also in octavo, entitled Revue Zoologique par la Société Cuviérienne, devoted to reviews, bibliographical notices, and other zoological intelligence, together with abstracts of zoological papers read at the Académie des Sciences or other scientific bodies at Paris. Both these periodicals again got much in arrear, especially the Magasin; but at length (in 1849) the editor having succeeded in obtaining from Government that assistance which is so fre-

quently given abroad to publishing scientific Societies and Journals, commenced a new series, combining the two under the title of Revue et Magasin de Zoologie pure et appliquée. This work is now in the seventeenth yearly volume of the series, or twenty-eighth of the whole work.

The Journal de Conchyliologie, in octavo, with plates, exclusively devoted to Mollusca, and chiefly to their shells, was established in 1850 under the direction of Petit de la Saussaie. Four volumes formed a first series to 1853. In 1856 a second series was commenced under the direction of Fischer and Bernardi, and carried on to a fourth volume, dated 1860, since which there are two complete volumes of a third series, conducted by Crosse, Fischer, and Bernardi.

For Botany alone Desvaux had established a Journal de Botanique, in octavo, in 1808, which was carried on till 1814, in parts, forming five volumes. There are in it a few of Desvaux's own descriptive papers, but generally very little that we have now occasion to refer to.

Guillemin again in 1833 started a monthly Journal of Botany, in octavo, entitled Archives de Botanique; but although it was supported by several of the principal French botanists, who contributed original papers, it only lasted a single year, forming two volumes, with a few plates.

Duchartre's Revue Botanique, in monthly parts, octavo, forming two volumes for 1846 and 1847, although professedly devoted to reviews and bibliographical notices, contains also a few short original papers by J. Gay and others.

The Revue Horticole, appearing also in numbers, forming annual volumes, at first small octavo, and now large octavo, has had twenty-one volumes in four series, and is now in the fifth of the fifth series; but the volumes are no longer numbered, but only designated by the year of publication. Although chiefly devoted to horticulture, it contains some botanical papers by Decaisne and others, which we have occasionally to refer to.

The Bulletin de la Société Linnéenne du Nord de la France, at Abbeville, one volume, octavo, 1840, with a few plates, contains papers on local Malacology and Entomology, and has not since been continued.

The Annales de la Société Linnéenne du Département de Maine et Loire, at Angers, extends to four thin volumes, large octavo, 1854 to 1861, with plates, very well got up as to typography. It contains many papers on the local fauna and flora, especially birds,

mollusca, insects, and fungi, and several in vegetable physiology, diversified by geology, statistics, poetry, heraldry, &c.

The Linnean Society of Bordeaux, commencing in 1826, has published twenty-four volumes, octavo, to 1863, of Proceedings and Transactions, of which the Royal Society has eighteen to 1852. The first three are under the title of Bulletin d'Histoire Naturelle de la Société Linnéenne de Bordeaux, the remainder as Actes de la Société Linnéenne de Bordeaux. There are a very few plates, chiefly in the latter volumes. There is in the series much of geology and palæontology, the zoology and botany relating almost entirely to the fauna and flora of the country. There are also a few papers on the anatomy and physiology of insects, by Léon Dufour, and in physiological and general botany of little importance by Charles des Moulins and others; and in the sixth volume is one of those short communications in which Rafinesque sought to encumber botanical science with a long batch of useless generic names.

A Linnean Society established at Caen, commenced publishing Memoirs in octavo in 1824, under the title of Mémoires de la Société Linnéenne du Calvados. With the third volume (in 1826–27) it had changed to Mémoires de la Société Linnéenne de Normandie; and with the sixth volume the octavo form was exchanged for the quarto, and the Memoirs have now, I believe, been brought down to the thirteenth. I have only seen, however, the five octavo volumes, which contain papers on the local geology, malacology, entomology, and botany, with a general monograph of some genera of lichens, by Delise. In 1856 the Society commenced also a Bulletin de la Société Linnéenne de Normandie, in octavo, with a few plates, of which we have only the last two volumes, the eighth and the ninth, containing, besides reports of Proceedings, original papers, often of considerable length, in which geology and palæontology occupy a great space. There are also entomological papers, European and exotic, by E. Eudes-Deslongchamps and A. Fauvel; descriptions of a supposed new Californian genus of Liliaceæ (*Rupellaga*, Morière, probably the same as *Streptolirion*, Torr.), and of several new genera and species of New Caledonian plants, by Vieillard, being, with the Annales des Sciences Naturelles of Paris and the Lyons Mémoires above mentioned, the third receptacle for the simultaneous publication of these plants, to the great confusion of their synonymy.

The Société des Sciences Naturelles de Cherbourg was established in 1852, and very soon became Société Impériale, and began

publishing Mémoires, in octavo, with occasionally a few plates. In the tenth, for 1864, the last received, is a general classified index. Physics, geology, medical and industrial sciences occupy a large space. In zoology and botany, besides the local fauna and flora, there are several papers on the fauna of New Caledonia by Jouan, and of the Marquesas by Jardin, entomological communications by Mulsant, Rey, Bertrand-Lachenée and others, in botanical physiology and teratology by Le Jolis, Bertrand-Lachenée and others, algological by Le Jolis, Thuret, and Brébisson; and valuable lichenological papers by Nylander, besides a few unimportant ones on the botany of the Pacific islands.

Lyons publishes three contemporaneous series of scientific Transactions, to all of which their entomologists, at least, contribute Natural-History papers. The scientific branch of the principal Academy (Royal, National, or Imperial, according to the ruler of the day) began in 1845 their Mémoires de l'Académie Royale des Sciences, Belles-Lettres, et Arts de Lyon, Section des Sciences (in the title-page; Classe des Sciences on the cover), in octavo. The first series comprises two meagre volumes, dated 1845 and 1847, but including papers read in 1849. The only Natural-History papers are three short entomological ones in the second volume, with one small plate, the only one in the series. In 1851 a new series was commenced, of an enlarged size (imperial octavo), with the same title, except that the Académie Royale had become Nationale, and the words Nouvelle Série were added. In the second volume (1852) the word Nationale was exchanged for Impériale, and in the third the size was reduced to an intermediate one between the two previous ones. This form still continues up to the last volume received, the twelfth, dated 1862. In the first ten volumes of this series are numerous entomological papers of E. Mulsant and his collaborators, and in the earlier ones several of Jordan's contributions, both speculative as to his peculiar view of species, and descriptive of some of the innumerable forms he adds to the French Flora. In the tenth volume, also, 1860, the Missionary Father Montrousier (or Montrouzier) gives a Flora of the Island of Art, off the north coast of New Caledonia, with descriptions of numerous new genera and species. It does not appear what means the author had for determining and comparing his species, nor what were his reasons for publishing in these little-known Transactions, without communication with the Parisian botanists, who were occupied at the same time with New Caledonian plants; but the inconvenience of the proceeding is

fully exemplified by the paper being so long unknown to, if not ignored by, Messieurs Brongniart and Gris, who only allude to it in the present year, after having in several cases hit upon identical names for different genera, or published identical genera or species under different names.

Of the Annales de la Société Linnéenne de Lyon, four volumes, octavo, with a few plates, at first very indifferent, formed a first series from 1836 to 1852, containing several of Seringe's, and afterwards of Jordan's botanical papers, with improved plates, and a few entomological contributions. A second series, in imperial octavo, was begun in 1852, and carried on, in eight volumes, to 1862. In these are numerous entomological papers, sometimes occupying whole volumes, by E. Mulsant, A. Rey, and G. Levrat, and also several of Jordan's descriptions of so-called new species of French plants.

The Agricultural Society of Lyons professes also to include Natural History in its publications, which consist of three series, large imperial octavo, with very few plates, entitled Annales des Sciences Physiques et Naturelles, d'Agriculture et d'Industrie, publiées par la Société Royale d'Agriculture, etc. de Lyon. The first series is in eleven volumes, 1837 to 1848, the word Nationale being substituted for Royale in the eleventh; the second series, in eight volumes, carries it to 1856, the Nationale being again changed to Impériale in the third; and the present series, the third, commencing in 1857, has six volumes, the last received dated 1862. Here, as in other Lyons publications, are several long entomological papers by E. Mulsant and his coadjutors; and there is also in the seventh and eighth volumes of the second series a fauna of the Island of Woodlark or Moiou, by the same Father Montrouzier who wrote the Flora of the island of Art. The insects at least appear to have been worked up at Sydney, with the assistance of the late Mr. William MacLeay's collections; but although published in France, there appears to have been here no more than in the case of the Flora any communication with European naturalists. There are also in these Annales a few botanical papers, physiological or even descriptive, but of little or no importance, the great majority being geological or agricultural, and, especially in the later volumes, sericicultural.

The Académie des Sciences et Lettres de Montpellier, Section des Sciences, published in 1847 and 1848 two thin quarto pamphlets of papers, including a very few zoological and botanical, by Paul Gervais, F. Duval, and A. Delile.

The Mémoires de la Société d'Histoire Naturelle de Strasbourg are in five volumes, quarto, with plates, 1830 to 1862, the title being changed in the fifth volume (1858 to 1862) to Mémoires de la Société des Sciences Naturelles de Strasbourg. They contain, besides many geological papers and a few on the local fauna and flora, a few contributions to animal physiology and anatomy by Duvernoy and others, papers on the Giraffe by Joly and Lavocat, on Madagascar zoology by Sganzin, on Algerine testacea by Kuhn, on *Cyprinus barbus* by Buchner, and on a new crab by Lereboullet—and in botany, Lee on Ferns, on the cryptogams of officinal barks, and various histological contributions; Steenheil on Individuality in vegetables, and other speculative subjects; and W. O. Schimper's anatomy and physiology of mosses. Each paper has a separate paging throughout the series.

I have also references to Bulletins, Mémoires, or Annales of Natural-History Societies at Auxerre (Yonne), Colmar, Guéret (Creuze), Metz (Moselle), Privas (Ardèche), Rennes (Ille-et-Vilaine), La Rochelle, and Versailles (Seine-et-Oise), all of them otherwise unknown to me.

Zoological or botanical papers may also occasionally be found in the Transactions or Proceedings of the Scientific Academies or Societies of Agen, Amiens, Angers, Bayeux, Besançon, Bordeaux, Boulogne-sur-Mer, Caen, Chambéry, Clermont-Ferrand, Dijon, Epinal, Lille, Le Mans, Metz, Nancy, Nantes, Orléans, Provins, Rennes, Rouen, St. Quentin, Toulouse, Troyes, and Valenciennes; but as none of them profess to be specially devoted to Natural History, it would have taken up more time than I can bestow to look them over.

XIII. Britain and kindred States.

It had been my intention in a similar manner to have passed in review the Transactions and Journals in the English Language which profess to include Natural History among the papers admitted; but time and space have failed me, and this is of the less importance, as they are all so much better known to us than foreign ones. I shall therefore merely enumerate the titles of a few of the most important of them.

In the East Indies the Calcutta Journal of Natural History, octavo, was carried through eight volumes, from 1841 to 1848; and a few papers on Zoology and Botany are dispersed through the more or less voluminous series of the Journal of the Asiatic Society of Bengal, octavo, and their Asiatic Researches, quarto;

the Transactions of the Agricultural and Horticultural Society of India, octavo; the Madras Journal of Literature and Science, octavo; the Journal of the Indian Archipelago and Eastern Asia, octavo; and the Transactions of the Royal Society of Arts and Sciences of the Mauritius, octavo.

From Australia we have the Transactions of the Royal Society of Van Diemen's Land, of the Philosophical Society, afterwards Philosophical Institute, and now Royal Society of Victoria, and of the Entomological Society of Sydney, all in octavo.

From British North America we receive the Transactions of the Nova Scotian Institute of Natural Science, the annals of the Botanical Society of Canada, and the Canadian Naturalist and Geologist, all in octavo.

From the United States my friend Dr. A. Gray has kindly transmitted to me a list of no less than sixty-eight Transactions or Journals, in which more or less of zoology and botany has been published; and of these, thirty-six are still in progress. Very few are exclusively devoted to Natural History; but the Transactions of the principal Scientific Societies of Boston, New York, Philadelphia, and Washington contain numerous most valuable papers, both on American and general Zoology and Botany, interspersed with contributions to other sciences. The most important works of the kind in the Libraries at Burlington House are,—the Memoirs of the American Academy of Arts and Sciences at Boston, in quarto, and their Proceedings, in octavo; the Proceedings and Journal of the Boston Society of Natural History, octavo; the Annals of the Lyceum of Natural History of New York, octavo; the Journal of the Academy of Natural Sciences of Philadelphia, at first in octavo, and now in quarto; the Transactions of the American Philosophical Society at Philadelphia, quarto; the Contributions to Knowledge of the Smithsonian Institution, Washington, quarto; and Silliman's American Journal of Science, octavo. Dr. Gray's list comprises also Transactions still being published by Societies for general Science or for Natural History specially, at Albany, Bloomington (Illinois), Buffalo, California, Charleston, Chicago, New Orleans, Portland (Maine), St. Louis, and Salem (Massachussets), besides numerous Agricultural Associations.

At home our own Linnean Transactions and Journal, and those of the Zoological and Entomological Societies of London, of the Botanical Society of Edinburgh, and of the Natural History Society of Dublin, are exclusively devoted to Zoology and Botany, besides those of the Wernerian Society of Edinburgh, now ex-

tinct. Papers on our sciences are also dispersed through the voluminous Philosophical Transactions of the Royal Society, as well as through those of the Royal Society of Edinburgh, of the Cambridge Philosophical Society, and of numerous provincial Societies. We have had several Zoological and Botanical Journals, now discontinued, amongst which the most important were the several series of Journals of Botany edited by the late Sir William J. Hooker. The most important now publishing are the Annals of Natural History, the Ibis, the Zoologist, and Seemann's Journal of Botany, devoted exclusively to our sciences, besides occasional original papers in the Natural History Review, the Quarterly Journal of Science, and other periodicals which include general science. And although not strictly a Journal, I may mention incidentally as a proof of the comparative stability of our institutions, that the Botanical Magazine has now regularly appeared on the 1st of every month through an unbroken series of eighty-three years—a circumstance I believe wholly unparalleled in the case of any periodical, scientific or literary, on the Continent, where not only have political convulsions frequently disorganized every scientific institution, but where, in the most tranquil times, scientific Transactions and Journals are always falling in arrear of their regular issue.

In reviewing the various modes of publication tried, adopted, abandoned, or resumed by different scientific bodies, we see that the changes made have generally been governed by the desire to reconcile antagonizing rules, each of which has its advantages and inconveniences. Concentration of subjects for patrons and others, who only take a general interest in science or in the Society cultivating it, separation for those who devote themselves to the close investigation of special branches—the bulky quarto, with expensive plates indispensable for the complete illustration of a great number of subjects, or the compact octavo, more suited to the light purses of most naturalists, and more convenient for reference to all—an immediate call on the part of the members and supporters of a scientific body for ephemeral reports of the proceedings of each meeting, and the demands of science in general for a permanent record of the results of their labours, are objects all of which have been aimed at by most publishing associations. When first the inhabitants of a town or district begin to turn their attention from the ordinary business of life to science, lite-

rature, or the arts, the individuals are few, they stand in need of sympathy, encouragement, and support in the pursuit of intellectual occupations. For this purpose they form an Association, and the several members, however different the line of their individual pursuits, have one common object, which all can enter into—the investigation of the resources of their own immediate district. For their own use and that of their fellow-citizens, whom they are anxious to convince that they are not labouring in vain, they commence printing a report of their proceedings, every article of which, at that early stage, may be interesting to all. If the Society succeeds, if it obtains the support of a few active, zealous, and able members, its numbers and influence increase, a desire gains ground of extending the range of its researches, and of rising to a prominent position in the intellectual world. It enters into correspondence with other Societies; emulation induces it to encourage the treatment of general subjects in science, literature, and art; it gladly accepts elaborate papers, not immediately connected with its own locality, and which can only be interesting to those of its members who specially study the questions treated of; and, to give further value to the Transactions, contributions are sought for from the most eminent men in each line, whether forming part of the Association or not. As learning progresses, each individual member must more and more restrict himself to special subjects, and he finds that the publications of the Society have in the mean time so much increased in bulk and variety that his shelves become loaded with matters comparatively or wholly useless to himself. The sale of the Transactions, or the pecuniary support of the Association for the sake of its publications, does not keep pace with that extension of bulk and variety; and moreover, at the Society's meetings, it is found that the greater the details entered into of special branches, the less interest is taken in them by the members at large. Separation of subjects is then resorted to, and there are now but few Institutes, Academies, or other Associations that have risen to any importance in the treatment of general subjects, that have not had supporters enough to divide them into three separate bodies or branches, for Science, Literature, and Art. In the great centres of learning, division of labour has not stopped here. Moral and political sciences have almost universally formed either a distinct section of science, or an independent branch of learning between science and literature. Beyond that, there is much diversity in subdivision, and often much vacillation. Mathematics and Physical Sciences (Astronomy,

Mathematics, Physics, and Chemistry), often associated with Natural History, and still in some Transactions and Journals even included in the general title of Naturkunde, Naturwissenschaften, or Sciences Naturelles, have in other cases been quite separated. Geology is the next to be cut off, and Zoology has parted with Botany; and lastly, independently of the numerous Associations for the practical application of natural science, we have seen separate Societies, with their Transactions, as well as Journals for Ornithology, Ichthyology, Entomology, Palæontology, Histology, &c. Men have thus been encouraged to restrict their observations to very limited classes of beings, and to generalize upon the very inefficient data thus obtained, with the same inconveniences which resulted at the outset from generalizing upon observations made in a limited territorial area. Reaction, and an attempt at reconcentration, have in some cases been the consequence, and it is now a great practical question, which has agitated many academical bodies, and which deserves our own serious consideration, how far we should connect or separate them in our meetings and publications.

I have said that most of the great scientific bodies have by this time more or less completely adopted the separation of Mathematical and Physical Science from Natural History proper, but not all. I have had before me series of from twenty to sixty bulky quartos, in which they are more or less mixed from first to last. Taking the two hundred odd ponderous volumes of Italian, Spanish, and Portuguese Transactions, I do not think that there are, on an average, two Natural-History papers per volume—Art, History, and Literature predominating even over Mathematics and Physics; and at some of our meetings we have seen whole piles without anything to interest us. This amalgamation is often justified on the plea that in the smaller towns, or even in capitals where science is not yet cultivated, the number of members and the material support are not sufficient for issuing separate publications. But in such cases it would surely be for their interest to confine themselves to subjects of local interest which do receive that sufficient support, and that men who rise above these to general science, should send all contributions which ought to come under the notice of distant workers in the same branch, to Societies or Journals generally accessible to their fellow-labourers. It would appear to be a mistaken notion we many of us entertain, that by having our name appear as contributing to as great a variety of publications as possible we really promote our reputation. An

algebraical memoir between two zoological or botanical monographs does its author no more credit than a technical botanical description of new genera in a Journal of fashion. In either case the paper is absolutely lost till ferreted out by some industrious compiler; and then it is sure to produce confusion as to dates and rights of priority. Innumerable instances of a similar kind will probably be brought to light by the Royal Society's forthcoming indexes.

The same arguments apply, only with less force, to the separation of Geology and Mineralogy from Biology*; but when we come to the multiplied subdivisions of Zoology and Botany, we are met by drawbacks which are beginning to be much felt. For the distinction and classification of species, for the accurate observation of individual structure, for the collecting, in short, of those data upon which the superstructure of science must be founded, we require that men of the greatest ability should devote themselves especially, we will not say exclusively, to special classes of beings; but those higher branches of the science which are now attracting so much attention, the study of the phenomena of life, require a general knowledge of, or reference to, all classes. There is, with great individual diversity, so much general analogy in the principles of life in all the most dissimilar sets of beings, so much of mutual dependence of the one on the other, that in a science where the facts upon which we form an hypothesis are so few—the circumstantial evidence on which we found our judgments so scanty—we require in every branch to check our conclusions by what has been observed in others. Whilst therefore there is much practical use in such typographical arrangements as to enable every votary of science to furnish his shelves with what answers his special pursuit alone, it is no less essential that all discussion of general principles, whether in print or oral, should be readily brought to the notice of all.

The principle of the mutual bearing of different sciences pre-

* In reading this address to the Meeting, I made use of the term Biology in the restricted sense which, after the example of many writers, I had given to it in my addresses of 1862 and 1863, and I ventured to give further currency to the word Biontology alluded to in 1863. Now, however, as the extension of Biology to Zoology and Botany together in their widest sense has been further sanctioned by the British Association, who have given that name to their Section D, I feel compelled to follow their example. In matters of language, the purport of which is to make one's self intelligible, theory must give way to custom.

serves the unity of the leading scientific Body of each one of the European states, to which Body, if its number be limited, every one who devotes himself to science in any branch hopes one day to be admitted. In every State this Body has included, and does include, in its deliberations and transactions, all sciences; in many of them divisions or other arrangements have been adopted for the separate issue of divisions of science, or of isolated memoirs to supply the separate wants of individual members; but then a difficulty has occurred with regard to the reports of what takes place at each meeting which every member desires to receive. This has given rise to the publication of Minutes of Meetings, entitled Reports, Bulletins, Comptes Rendus, Rendiconti, Monats- or Jahresberichte, Oversigt, Öfversigt, &c. of Proceedings, or, as we say for shortness, Proceedings. In the early stages of each Association these Proceedings are generally prefixed to the Memoirs. The latter are, however, in quarto; the preparation of the illustrations takes time, and the parts are published often one or two years after the papers were read, when the minutes of the meetings have lost their ephemeral interest. A separate publication of Proceedings, in a more convenient form, at shorter intervals, has therefore of late years been generally adopted. As these Proceedings are sufficient to fix dates and establish priority of observations and names, it has been found satisfactory to contributors to include abstracts of their papers. To these have been gradually added short papers *in extenso*; and, no absolute definition of shortness being adopted, and the octavo being found the most convenient form for many memoirs, especially synoptical monographs, faunas and floras, many of these Proceedings have grown into Transactions, differing from the quarto ones only in form and frequency of issue, the original object of a distinct publication of ephemeral minutes of meetings not required for permanent reference being lost sight of: consequently a further modification has in some cases been adopted, a threefold publication, first, of quarto Transactions for important papers requiring costly illustrations, or which their authors prefer to see in that form; secondly, of an octavo Journal for papers equally permanent, but for reference to which the smaller form is more convenient; and thirdly, of separate or separable Minutes or Reports of Proceedings. Most bodies, however, limit themselves to the double publication of quarto Transactions, and Proceedings either in octavo or, in the case of the Russian and some Italian and German Academies, in quarto like the Transactions.

With regard to the Transactions themselves, various devices have been resorted to, by which those of the Members who consider themselves as patrons or general cultivators of science could exhibit the whole on their tables and shelves as one complete work, whilst the labourers in science might select separate portions without the appearance of being fragments only. Separate volumes, series, parts of volumes, &c. have been devoted to the principal branches; or, again, every separate paper, however short, has its separate title and paging, although stitched up into volumes, with a general title; or a certain number of copies of each paper are printed off with a separate title and paging for the separate sale. In some continental Transactions the separate paging of short papers is carried to such a degree as to entail all the inconveniences of a series of detached pamphlets. The double paging of the separate and continuous copies, on the other hand, produces much confusion in quoting references. The most convenient course pointed out by experience, seems to be that, in quarto Transactions including a diversity of subjects, the papers should be separable, but that each should bear an indication of the Transactions and volume from which it is taken, retaining at the same time the original paging in all separate issues, whether of authors' copies or for sale. We have long printed our own Transactions in such a manner as that the volumes can be broken up into separate memoirs; and the Council has now determined that authors' and other copies should retain the original paging. The Council have also taken into consideration the means of allowing a separate sale of individual papers. The only difficulty appears to be the very unequal demand there would be for them, thus leaving on our hands a large stock of broken sets.

A much more important question for our serious consideration is, how we are to retain our position or extend our influence as a Linnean Society for the cultivation of all branches of Biology, to maintain the unity of the science for all general discussions, and at the same time to promote accuracy by the encouragement of the closest study of the minutest details. Some five and thirty years since, a general feeling amongst the younger scientific men, that the old Societies established in previous generations were not keeping pace with the progressive changes of the day, induced the establishment of a number of separate Associations, either as supplementary or in opposition to the old ones, whilst in the latter the majority of the managers, often from a conservative feeling, stimulated by the political discussions of the day, did not see the

danger to themselves in resisting amendments. The Linnean Society in past times, I may be allowed to admit (as I was myself at the time for several years a member of the Council and a constant attendant at its deliberations), looked on with indifference whilst Zoological, Botanical, Ornithological, Entomological, and other Societies were set up under various pretexts to carry off its active or discontented members; and we seemed to be falling asleep with the additional incubus of the heavy debt incurred by the purchase of the Linnean Herbarium, zoological collections, and library. That time is now fortunately over. Under the conciliatory influence and able management of my predecessor in this chair, one of our present Vice-Presidents, on entering the Council, succeeded in stirring up the energies of the Society by a thorough reform in its proceedings. The result is a constantly increasing prosperity, which it behoves us to apply to the promotion of the highest objects of our Association. We are proud to reckon amongst our fellows all that is most eminent in the country in Zoology as well as in Botany. The valuable, rare, and costly works of our large library, as well as those of more daily practical use, are very fairly divided between the two branches; all our efforts have been directed to the promotion of both; the chair I now occupy has been alternately filled by the special votaries of each. It has been, and should be, our ambition to establish ourselves firmly as the great centre for all biological science, whence the various branches should radiate. But for this there are great practical difficulties to be overcome. Mere opposition Associations have died a natural death, and entomologists have such inexhaustible numbers of individual objects to work up in detail, as to give occupation enough for a distinct Society without interfering with us; but the extraordinary prosperity of the Zoological Society under its present active management threatens to withdraw from us much of zoological matter that our botanical members would be anxious to partake in.

The Zoological, or as it soon became, the Entomological Club of the Linnean Society, was first separated from us as a distinct Zoological Society with a view chiefly to establish and maintain a collection of living animals, which could not come within our proper attributes; and had we then been active we might have retained our connexion so as to secure the scientific business, in correspondence with but apart from the more special objects of the new establishment. As it is, the Zoological Society have gradually provided themselves with immense resources; they have meetings for

scientific business apart from their general meetings, active promoters of their scientific proceedings, and ample support for their publications, as well as general members attracted by their splendid gardens; and some of them may have hinted that the Linnean Society may be left to botanists; but I am happy to say that several of their leading men have agreed with me that the Linnean ought to maintain its position at the head of both branches, and that a closer connexion between the scientific branch of the Zoological and the Linnean might yet be reestablished. I foresee great practical difficulties in the details of any plan that has been thought of, but not, I think, insurmountable ones; and the object appears to me so desirable for the interests of both Societies, and for the general promotion of Science, that I should be most anxious to receive and consider any suggestions which might occur to you on the subject. In the mean time I would strongly impress upon those zoologists who treat of geographical distribution, biological history, metamorphosis, and development, and other general questions, as well as the investigators of those lower orders of animals which are either closely connected with or dependent on vegetable life, or cannot form part of the Regent's Park Menagerie, the advantage of sending their communications to us in preference to Societies of more restricted range.

To Geology proper we have long given up all pretensions; but in the present day, when many a link between former races of beings and those now living has been established, palæontology is becoming more and more connected with actual biology, and we ought perhaps to encourage the production of papers on the subject at our Meetings.

Our Ethnological Societies appear now to be at the zenith of their prosperity, and take a very wide range for their discussions. If any reaction should hereafter take place, and they return to their more legitimate subjects, it will be found perhaps that some of those they have treated would more naturally come under animal biology.

There is another Society to whom we are much indebted for encouragement and cooperation, our own parent, the Royal Society, the acknowledged head of all science in the country. Our connexion with them has, I am happy to say, been drawn much closer since we have been admitted under the same roof. It has occurred to some members of both bodies that advantages might accrue to both by some still closer connexion as to the publication of papers on the higher questions of Natural History.

As yet no practical plan has been proposed; but suggestions have been made which, if matured, will, I have no doubt, be considered by the President and Council of the Royal Society in that liberal spirit which they have ever evinced towards us.

In conclusion, Gentlemen, I have to beg you to excuse my having thus alluded to these various difficulties and suggestions, my object being to show how deeply I feel the obligation imposed upon us to maintain our position at the head of Biological Science, and the necessity of constant vigilance and activity to secure that end, and to assure you how anxious I am to perform my part, which is but very little without the cordial cooperation of you all.

Additional Notes.

The Copenhagen Videnskabelige Meddelelser, mentioned above, p. xiv., are complete in Dr. Sclater's library. They relate exclusively to Zoology and Botany. The last volume received is that for 1863, dated 1864.

At Naples, an Annuario del Museo Zoologico della R. Università di Napoli is published under the editorship of Achille Coste in thin annual parts, large octavo, with a few plates. The second, for 1862, but dated 1864, is the last received.

At Palermo, a Giornale di Scienze Naturali ed Economiche, pubblicato per cura del consiglio di perfezionamento annesso al R. Istituto tecnico di Palermo, has commenced, in quarto, with plates. The two parts received, both dated in the present year, contain, amidst a variety of subjects, a paper on fossil Nerineæ by Gemmellaro, and one on some new Fungi by Inzenga.

A Bulletin de la Société Ornithologique Suisse, in very large octavo, with plates, has just been commenced at Geneva.

OBITUARY NOTICES.

The Secretary then read the following Notices of deceased *Members*:—

The Venerable Archdeacon Charles Parr Burney, D.D., F.R.S., F.G.S., &c., was born at Chiswick, on the 19th of October, 1785.

Descended from a family distinguished for several generations on both the male and female sides by literary and other attainments, the late Dr. Burney fully maintained the honour of his name. Under the immediate tuition of his father, the celebrated classical scholar, and doubtless with a view to the scholastic profession himself, Dr. Burney's attention, as was to be expected, was principally devoted to classical and mathematical studies, in which he became distinguished at an early age. His university career was passed at Merton College, Oxford; at its conclusion he joined his father in the direction of the large and excellent school for which Greenwich was so long and so eminently distinguished, and to the entire management of which Dr. Burney succeeded on the death of his father.

On receiving a presentation to the living of Sible Hedingham, in Essex, Dr. Burney relinquished the academical profession, and devoted himself, with his characteristic conscientiousness, to the duties of a parish priest. Shortly afterwards he was appointed Archdeacon of St. Alban's, and in 1845 was nominated to the same office in Colchester.

Though never, so far as I am aware, a contributor himself to natural science, Dr. Burney was throughout his life distinguished by his attachment to it. He delighted in the conversation of scientific men, and at one time was a not unfrequent attendant at the meetings of this and of other societies, especially the Geological and Zoological, of which latter he was one of the original members. He became a Fellow of this Society on the 21st of January, 1823; and died at Brighton, on the 1st of December, 1864.

Samuel Cartwright, Esq., F.R.S., F.G.S., &c., was born at Northampton. in the year 1789, and died at Tunbridge, on the 10th of June, 1864, having been a Fellow of this Society since the 19th of November, 1833.

Although a member of nearly every scientific society in London, Mr. Cartwright was not, so far as I am aware, a contributor to the 'Proceedings' of any. He was, nevertheless, a man of considerable mark, and in his own profession—that of a dentist—perhaps in his time unrivalled.

He came to London at an early age, dependent wholly upon his own exertions for his daily support, and commenced life as mechanical assistant to Mr. Dumergue, who was at that time in extensive practice as a dentist among the fashionable population of the West End. During this service, in which he worked assiduously and conscientiously, Mr. Cartwright yet found time to improve himself in general professional knowledge by a regular attendance on anatomical and surgical lectures.

In 1811, having thus fully qualified himself, not only in the mechanical but also in the more scientific departments of dentistry, he started in practice on his own account, and soon, as most present perhaps are aware, acquired a reputation second to that of none, either before or since, who have practised the same branch of the healing art.

He was as remarkable for the rapidity and correctness of his judgment as he was for marvellous dexterity in all manipulatory processes; and the energy with which he discharged his professional duties may be estimated when it is stated that during a great part of his career he was in the habit of seeing from forty to fifty patients every day, and this for months together, standing constantly from seven o'clock in the morning until the same hour in the evening, and yet in every case doing what he had to do without the slightest appearance of hurry or fatigue.

Mr. Cartwright's pleasing manners, liberal hospitality, and professional fame acquired for him the friendship of nearly all the men most distinguished in science, literature, and art of his day. He retired from the labours of practice in 1857, and in the following year had an apoplectic seizure which resulted in palsy, under which he laboured for the rest of his life.

Henry Christy, Esq., F.G.S., was the eldest surviving son of the late William Miller Christy, of Woodbines, Kingston-on-Thames. His elder brother, who died some years since, was well known in this Society as an ardent and accomplished botanist.

Henry Christy from his youth had displayed, in common with his brother, a great love for natural science, and especially for geology and botany; but the earlier years of his life, when arrived at man's estate, were devoted to the conducting and improvement of his father's manufactory at Stockport in Lancashire. He retired from business, however, many years since, and, with ample means, dedicated himself to the pursuit and encouragement of art and science.

Not from idleness or the love of ease did Mr. Christy thus relinquish an extensive and lucrative business, but simply, as it

would seem, to afford himself unshackled leisure to follow his favourite pursuits, and, generally speaking, to devote his time and ample means to the advancement of science in any direction where he perceived an opportunity of being useful. One of the branches of knowledge which appears at this time to have more especially attracted his attention was what may be termed that of ethnological archæology. He was particularly interested in the primitive arts and customs of the semicivilized and savage races of mankind; and with a view of collecting materials and observations relating to these subjects, as well as of increasing his natural-history knowledge, Mr. Christy undertook numerous and extensive voyages and travels. One of the most important of these earlier labours was the exploration, in company with his friend Mr. Edward B. Tylor, the accomplished author of 'Researches into the Early History of Mankind,' of nearly all parts of Mexico and other places in the West Indies. The results of this voyage, the publication of which, as I understand, owes much to Mr. Christy's liberality, were made known by his coadjutor in 1861 under the title of 'Anahuac,' a work full of the most curious archæological and other information conveyed in a pleasing and attractive style.

Mr. Christy had also at different times visited all parts of the United States and, in fact it may be said, of the continent of North America in its temperate zone, from the shores of the Atlantic to those of the Pacific Ocean, visiting Canada and the colony of British Columbia, &c.

His indefatigable zeal and enlightened curiosity in like manner carried him to nearly every part of Europe, from the Scandinavian kingdoms of the north to the extremity of Southern Spain. He had also travelled in the East, and had visited many parts of the north of Africa, in Algeria and, I believe, Morocco, stretching his explorations to the slopes of the Atlas and the borders of the Great Desert, whence he brought numerous and curious relics of primitive human art.

In all these extensive peregrinations Mr. Christy was far more than an ordinary tourist. Wherever he went, he went with a definite object, which he followed out with indomitable industry, and in the furtherance of which he spared neither personal exertion, time, nor money. As connected with his favourite subject, Mr. Christy was, when in Denmark, much interested in the unrivalled collection contained in the Museum of Northern Antiquities, which has been brought together and is supported by the liberality of the Danish Government seconded by the en-

lightened cooperation of the well-educated and intelligent Danish people of all ranks, and which is under the direction of the eminent scientific men who have added such lustre to the Scandinavian name.

In the prosecution of his researches Mr. Christy was necessarily thrown into close relations with numerous scientific men in all parts of the world, none of whom will ever cease to cherish the remembrance of the well-considered and liberally tendered aid always readily afforded by our lamented friend. Nor will those among them who were fortunate enough to experience it ever forget the genial hospitality and kindly manner with which they were invariably welcomed in this country by Mr. Christy.

Of late years Mr. Christy's attention had been more particularly directed to those branches of archæological inquiry which relate to the subject which at the present day, in one way or another, occupies perhaps more widely than any other the interest and attention of both the learned and the unlearned, and which, in fact, more than any other, offers problems of the highest importance in almost every branch of human knowledge; for it would be difficult to name any department of science which might not be invoked to throw light upon the vast questions relating to the origin and primitive relations of the human race.

To this great and important question Mr. Christy devoted the last years of his life, and, in fact, it may with truth be said, his life itself; and few will be found who have contributed more valuable materials for its future elucidation.

In intimate association with his friend M. Lartêt, one of the most distinguished, if not the most distinguished and accomplished, of existing Mammalian palæontologists, and equally versed in priscan archæology, whose successful explorations at Aurignac and other places in the south of France are so well known, Mr. Christy determined to follow out similar researches in other promising localities in the same or adjoining districts of the country. The points selected were principally on the banks of the Vezère, in the Dordogne, as at Les Eyzies, Laugerie, &c.

These explorations, which have been uninterruptedly pursued up to the present time solely, I believe, at Mr. Christy's expense, and for the most part under the personal inspection of himself and his friend M. Lartêt, have necessarily involved a very considerable outlay of money and great sacrifice of time and labour—all given ungrudgingly and most unselfishly by Mr. Christy. In all this work and in all these sacrifices he was animated by no

feeling of a personal kind, but solely by a desire of benefiting science, and of adding all he could to the materials for the future solution of the great and absorbing question of the day.

The rich materials thus abundantly collected by the exertions of MM. Christy and Lartêt were not reserved for their own special use or glorification, but were as widely distributed and as liberally afforded to all engaged on the subject to which they belonged as they were industriously collected. The choicest specimens, as was but right, having been selected to form a principal public collection in France, out of the remainder numerous well-selected sets were made up, and have been distributed, at Mr. Christy's expense, to nearly every public museum in this country and abroad, where they would be valued and useful, as well as to numerous private individuals known to be interested in the subject. Such an instance of the purest and most disinterested liberality in the cause of science is, I think, almost unexampled, and well deserves to be kept in honoured remembrance. The copious and unrivalled results of the conjoined labours of Mr. Christy and his friend were intended to be embodied in a work of great extent, under the title of 'Reliquiæ Aquitanicæ,' of which numerous plates have already been prepared, and which it is to be earnestly hoped—and there is, I am glad to learn, every reason to believe—M. Lartêt will be able still to carry to completion. When completed, it will be one of the most important contributions to the early history of mankind (at the extraordinary epoch when the Reindeer was the most abundant mammal in the south of France) it is possible to conceive.

Mr. Christy's liberality to various public collections was not confined to the above instance. He was constantly in the habit of presenting most valuable and costly specimens to the British Museum and to the Hunterian Museum of the Royal College of Surgeons, which is indebted to him for several donations of great value, amongst which, as particularly interesting to this Society, I would mention a most perfect and beautifully prepared skeleton of the West-Indian Manatee, which had been procured and set up by Mr. Christy at a very considerable expense.

But this brief and imperfect notice of the life and character of Mr. Christy cannot be concluded without my stating that his claims to our regard, and, in fact, to the regard of all men, are not based simply upon his exertions and his liberality in the cause of science. His liberality was universal: wherever he perceived a worthy object, his hand was open as the day; but of the extent to

which his benevolence was carried none perhaps but himself and its recipients, and not always they, were aware; he was truly one of those who love to do good by stealth. But on more than one public occasion the warmth of his charity and the liberality of his soul, and at the same time the soundness of his judgment in the distribution of his aid and the application of his time, could not be concealed. At the time of the Irish famine Mr. Christy was conspicuous for his personal devotion to the examination of the state of the people on the spot, and for the liberality with which he came forward, not only with his money, but with his time and exertions, to the relief of their distress. In this cause, indeed, he was nearly falling a victim to his benevolence.

On the occasion also of the late iniquitous Danish war, in which a gallant people were overwhelmed, notwithstanding the display of the most indomitable resolution and courage, in an unequal struggle with unscrupulous foes, Mr. Christy's sympathies were deeply roused, and he gave considerable sums towards the fund that was raised in this country for the relief of the wounded heroes of the Danish army.

As might be expected from his varied and extensive travels, and from the liberal way in which he carried out any object he had in view, Mr. Christy had collected a most extensive and invaluable museum of articles relating to ethnology and the arts of savage or of primitive human life, and which is especially rich in implements and weapons of stone and bronze from all parts of the world and of all periods, many of which are unique. I am glad to be able to announce that in his will Mr. Christy, not unmindful that he might be useful to science after death, has provided for the due maintenance or proper disposition of his dearly prized collection—entrusting its disposal, as I am given to understand, to some of his friends on whose judgment he could safely rely, and who will doubtless carry out his wishes in the best possible manner for the advancement of science and the perpetuation of the name of Henry Christy.

One circumstance remains to be mentioned in honour of our departed friend. On the last occasion of the selection of candidates for the honour of the Fellowship of the Royal Society, Mr. Christy was one of those chosen—an honour which he had so well earned, and which he so deeply prized, but which, alas! he was not spared to enjoy.

Mr. Christy may be said to have died, as he had lived, in the cause of science. Naturally of a delicate constitution, he was yet

negligent of himself when he had an object before him. During the last spring he had suffered a good deal from a bad cough; but notwithstanding this, on the occasion of a late visit by several of his friends to the ossiferous caves in the Valley of the Meuse and Lesse in Belgium, he joined the company at Liège, suffering at the time a good deal from cough and general weakness. On quitting this party at Dinant, on the 20th of April, he proceeded to Paris to join M. Lartêt in a journey to Switzerland. Before they set out, however, M. Lartêt, who had noticed a great alteration in his voice, and was alarmed at the violence of his cough, persuaded him to take medical advice; but this it appears was unavailable to prevent his continuing the projected journey, the object of which was the comparison on the spot, by himself and M. Lartêt, of the animal remains from the Dordogne with those collected from the pile-dwellings of Switzerland. He accordingly set out with his attached friends M. and Madame Lartêt. Arriving the following day at La Palisse, he exposed himself a good deal to heat and fatigue in an excursion in the neighbourhood of that town, and in the evening was compelled to take to his bed, whence he never rose again, and where, in spite of the most attentive kindness and the ablest medical advice, and after several fluctuations of hope and despair in those who watched him, he died, on the 4th of May, in the fifty-fifth year of his age. His calmness and resignation in the immediate prospect of death, and the kind and considerate manner in which he expressed himself towards his friends and with respect to the objects to which he had devoted his blameless life, appear to have been truly remarkable, and to show more clearly than anything else his true character as a most excellent and wholly unselfish man.

Hugh Falconer, M.D., Vice-Pres. R.S., For. Sec. G.S., &c., was born at Forres, in the north of Scotland, on the 29th February, 1808. His early education was conducted at the Grammar School of Forres; and he afterwards studied arts for four years at King's College, Aberdeen, and medicine for an equal period in the University of Edinburgh.

As a boy he exhibited a decided taste for the study of natural history, which he eagerly followed up in Edinburgh under Professors Graham and Jameson. When duly qualified, he was nominated to the appointment of Assistant-Surgeon on the Bengal Establishment; but, not having attained the required age of twenty-two, he indulged the natural bent of his mind in the compulsory interval in assisting the late Dr. N. Wallich in the distribution of

his great Indian herbarium, and in the study of geology and palæontology. In the latter subject the Museum of the Geological Society of London, at that time under the charge of Mr. Lonsdale, afforded him ample materials, amongst which, as bearing more especially upon his future inquiries, was the collection of Indian fossil Mammalia from the banks of the Irawaddi, formed by Mr. John Crawford during his mission to Ava, and the description of which by Mr. Clift had excited much interest in the scientific world, as the first instance in which ground had been broken in the palæontology of tropical regions. The influence of his study of these remains was manifested immediately on his arrival in Calcutta in September 1830, when he undertook the examination of a collection of fossil bones from Ava in the possession of the Asiatic Society of Bengal, and upon which he communicated a short paper in the third volume of the 'Gleanings of Science.' This notice, though slight and modest in its scope, nevertheless at once placed Dr. Falconer in a recognized position on the then scanty roll of cultivators of science in India. Early in 1831 Dr. Falconer, being ordered to the station of Meerut, performed his first and last military duty during twenty-six years of service. This consisted of his taking charge of a detachment of invalids proceeding to the Sanatorium of Landour in the Himalayas. Fortunately for science and perhaps for himself, his route passed through Suharanpoor, where the late Dr. Royle was then Superintendent of the Botanic Garden. Kindred tastes and common pursuits soon knit Falconer and Royle together; and at the instance of his friend, Falconer was appointed to officiate for him during a leave of absence, and in the following year Dr. Falconer succeeded him altogether in the charge of the Garden. Thus at the early age of twenty-three was he advanced to a responsible and independent public post, offering to the naturalist the most enviable opportunities for research; and thus in his case was afforded a striking instance of the advantages the Indian service, at that time and still, occasionally holds out to those among its junior medical officers who may display a special aptitude for the discharge of scientific functions independent of their profession. Suharanpoor is situated between the Jumna and the Ganges, distant about twenty-five miles from the Sewalik Hills, and close upon the confines of the Tarai or belt of forest lying between the mountains and the plain. From the variety of soil, climate, and productions afforded in such a situation, Suharanpoor is thus most favourably placed as a central station for natural-history investigations; but being a remote (more

then, perhaps, than now) provincial station, with very few European residents, these had to draw on local means alone in all emergencies where the appliances of civilized life were required. This was also the only source to which Dr. Falconer could look for such scientific appliances as his inquiries demanded; and in the utilization of the intelligence, docility, and manual dexterity of the natives his zeal and energy enabled him to effect more than might have been deemed possible.

To construct a mountain-barometer, for instance, broken tumblers were melted and made into a tube, whilst the mercury was distilled from cinnabar purchased in the bazaar; a reservoir was turned out of boxwood felled on the mountain; and, lastly, a brass scale was cast, shaped, and graduated by a native blacksmith under the superintending eye of the master. Such discipline was of infinite value in training the young officer to habits of self-reliance, and in establishing kindly relations with those around him, and no doubt contributed greatly to the fund of universal information for which Dr. Falconer was afterwards so remarkable.

Thus favourably situated and prepared as he was by previous training and special study, it was not long before Dr. Falconer's well-directed observations were duly rewarded by important discoveries in his favourite subject of palæontology. In 1832 he commenced an exploration of the subhimalayan range, and, led by the indications afforded by a specimen in the collection of his friend and colleague, Capt. (now Sir Proby T.) Cautley, he discovered vertebrate fossil remains *in situ* in the tertiary strata of the Sewalik Hills, as recorded in a brief communication to the 'Journal of the Asiatic Society of Bengal' for 1832. The search was speedily followed up by Capt. Cautley in the Kolowala Pass, and resulted in the discovery of more perfect remains, including those of several Miocene Mammalian genera. Early in 1834 Dr. Falconer gave a brief account of the Sewalik Hills, describing their physical features and geological structure, with the first published section, showing their relation to the Himalayas. The name "Sewalik," which had previously been rather vaguely applied, was restricted by Dr. Falconer to the flanking tertiary range separated from the Himalayas by valleys or "doons;" and the term thus restricted, though at first unfavourably received, is now universally adopted. The "tertiary" age of the Sewalik Hills was now also for the first time pointed out, in opposition to the notion that they belonged to the New Red Sandstone, to which they had previously been referred.

The researches thus begun were followed about the end of 1834 by the discovery by Lieutenants Baker and Durand of the great ossiferous deposit of the Sewaliks, near the valley of Markunda. Cautley and Falconer were immediately in the field; and by the joint labours of these four officers a subtropical Mammalian fossil fauna was brought to light, unexampled for richness and extent. It included the earliest-discovered Quadrumana, numerous new forms of Proboscidia, extinct species of *Rhinoceros*, *Chalicotherium*, *Equus*, and *Hipparion*, *Hexaprotodon*, *Hippopotamus* and *Merycopotamus*, *Sus*, and *Hippohyus*, the gigantic *Sivatherium*, several species of Camel, Giraffe, and new types of *Bovidæ*, &c., &c., also numerous fossil bones of birds and reptiles, amongst which was the enormous *Colossochelys Atlas*, &c. Thrown suddenly upon such rich materials, the ordinary aids in their determination by comparison were wholly wanting to the discoverers. But Falconer was not the man to be baffled by such discouragements. He appealed at once to the living forms around him to supply the information he required; and this was made available by him and his indefatigable coadjutor in the preparation of a series of memoirs descriptive of the more remarkable of the newly discovered forms, which appeared in the volumes of the 'Asiatic Researches,' the 'Journal of the Asiatic Society of Bengal,' and in the 'Geological Transactions.' The Sewalik explorations soon attracted the notice of European palæontologists and geologists, and in 1837 the Wollaston Medal in duplicate was deservedly awarded to Dr. Falconer and Captain Cautley. At the same time the duties of his office as Superintendent of the Botanic Garden were not neglected. In 1834 a commission was appointed by the Bengal Government to inquire into and report upon the fitness of India for the growth of the tea-plant. Acting on the information and advice supplied by Dr. Falconer*, the commission recommended a trial. The recommendation was carried out by the establishment of experimental nurseries, which were placed under Dr. Falconer's superintendence, and in sites selected by him.

In 1837 Dr. Falconer was ordered to accompany Burnes's second mission to Caubul, which preceded the Affghan war. In the prosecution of this mission, he proceeded at first westward to Kohat and the lower part of the valley of Bunguish; and afterwards, in company with Lieutenant Mackeson, he journeyed to Cashmere,

* Journ. As. Soc. Beng. 1834, iii. p. 182.

where he passed the winter and spring examining the natural history of the valley. The following summer (1838) he crossed the mountains to Iskardo in Bulkistan, and, by the aid of Rajah Ahmed Shah, traced the Shiggar branch of the Indus to its source in the glacier on the southern flank of the Mooztagh range, 28,000 feet above the level of the sea. After examining the great glaciers of Arindoh and of the Brahldoh valley, he returned to India *viâ* Cashmere and the Punjaub, towards the close of 1838, to resume his duties at Suharanpoor. Of this interesting tour he has left copious notes, which it is to be hoped may some day be published; but those who enjoyed his intimacy will long remember the animated and interesting way in which he occasionally related some of the strange and curious incidents which befell him and his companions in the course of it. One very striking anecdote occurs to my recollection, according to which the safety of himself and his company were on one occasion secured by the favour he won from a chief by the exhibition of the wonders displayed in a drop of water by the microscope, and the politic presentation of the wonder-working instrument to the admiring chief.

In 1840 Dr. Falconer's health, shattered by numerous attacks of illness, completely gave way, and in 1842 he was compelled to seek for a chance of recovery in Europe. He returned to England, bringing with him the natural-history collections amassed during his residence in India and on his extensive journeyings. These amounted to eighty cases of dried plants and about fifty large cases of fossil bones, together with geological specimens illustrative of the Himalayan formations from the Indus to the Gogra, and from the plains of the Punjaub across the mountains north to the Mooztagh range.

Soon after his return to England Dr. Falconer devoted himself almost entirely to the arrangement and examination of the Sewalik fossils. The vast collection made by Captain Cautley, filling 214 large chests, had been presented to the British Museum; and the selected collection belonging to Dr. Falconer himself was divided between that institution and the India House. The labour of superintending the preparation, and of describing and arranging this enormous mass of materials, devolving upon Dr. Falconer, he devoted himself with characteristic zeal to the gigantic task. Rooms for the purpose were assigned to him at the British Museum, whilst the Court of Directors liberally employed him on duty on the footing of service in India; and at his instance they prepared a series of casts of the most remarkable fossils, which

were presented to the principal Museums in Europe. The chief results of the labours thus undertaken are exhibited in the Palæontological Galleries of the British Museum, to which may well be applied, with respect to Falconer, the words inscribed to the memory of Wren in St. Paul's Cathedral. Under the patronage of the Government and of the India House an illustrated work was also commenced, entitled "Fauna Antiqua Sivalensis," of which the plates of nine parts were brought out between 1844 and 1847. It is deeply to be deplored that the letterpress descriptive of these beautiful figures, for the most part exquisitely drawn by Ford under the continual and minute superintendence of Dr. Falconer, should never have been completed; but before this could be accomplished the expiration of his leave, in 1847, compelled the return of the author to India, and thus interrupted the progress of a work which, had it been completed according to the original design, would have been one of the most splendid contributions to palæontological science ever produced.

His botanical collections were less fortunate. Having partially suffered from damp on the voyage to England, they were deposited in the cellars of the India House during his second absence in India, where the specimens underwent a ruinous process of decay. A few only were rescued from absolute destruction when Dr. J. D. Hooker succeeded, in 1857, in an application to the authorities at the India House for the removal of these and other botanical collections to Kew.

During his brief residence at this time in England, Dr. Falconer contributed to the Royal Asiatic Society a "Discourse on the Fossil Fauna of the Sewalik Hills" (Journ. R. A. Soc. 1844), to the Zoological Society a description of the "Gigantic Fossil Tortoise, *Colossochelys Atlas*," discovered by himself and Capt. Cautley (Proc. Zool. Soc. 1844, p. 85), and to the Geological Society Memoirs "On Fossil Remains of Anoplotherium and Giraffe, from the Sewalik Hills" (Proc. Geol. Soc. 1844, vol. iv. p. 235), and on "Dinotherium, Giraffe, and other Mammalia from the Gulf of Cambay" (Quart. Journ. Geol. Soc. 1845, vol. i. p. 356); to the Linnean Society he communicated papers on the Asclepiad affinities of *Cryptolepis*, on *Aucklandia Costus*, the Cashmere plant which yields the *Kostos* of the ancients, then for the first time determined—and on *Narthex Asafœtida*, being the first determination also of the plant, long contested among botanists, which yields the asafœtida of commerce. He had found it growing wild in the valley of the Astore, one of the affluents of the Indus. To

the same Society he contributed in 1847 a paper on "*Athalamia*, a new genus of *Marchantieæ*" (Linn. Trans. vol. xx. p. 397).

In 1848, on the retirement of the late Dr. Wallich, Dr. Falconer was appointed his successor as Superintendent of the Calcutta Botanic Garden, and Professor of Botany in the Medical College. In 1850 he was deputed to the Tenasserim Provinces to examine the Teak-forests, which were threatened with exhaustion from reckless felling and neglected conservation. His report, suggesting remedial measures, was published in 1850 in the 'Selections from the Records of the Bengal Government.' In 1852 he communicated a paper on the quinine-yielding Cinchonas and their introduction into India (Journ. Agr. Hort. Soc. of India, vol. viii. p. 13); and in the same year the writer of the sketch (Dr. Murchison), from which this account is chiefly drawn, saw, in the Calcutta Botanic Garden, a Wardian case containing specimens of *Cinchona calisaya*, in which Falconer took great interest. Dr. Falconer was not at the time cognizant of Weddell's accurate determination of the species; but he recommended a trial, and indicated the hilly regions in Bengal and the Neilgherries in Southern India as the most promising situations for experimental nurseries. The subject was taken up independently of this recommendation some years afterwards; the bark-yielding Cinchonas were then introduced from South America, and are now thriving in India. In 1854, assisted by his friend the late Mr. Henry Walker, he undertook a 'Descriptive Catalogue of the Fossil Collections in the Museum of the Asiatic Society of Bengal,' which was published as a distinct work in 1859. In the spring of 1855 he retired from the Indian service, and on his return home visited the Holy Land, whence he proceeded along the Syrian coast to Smyrna, Constantinople, and the Crimea during the siege of Sebastopol.

Soon after his arrival in England he resumed his palæontological researches, and in 1857 communicated to the Geological Society two memoirs "On the Species of Mastodon and Elephant occurring in the Fossil State in England" (Quart. Journ. Geol. Soc. vol. xiii. p. 308). Besides attempting to discriminate with precision the three British fossil elephants till then confounded under the name of *Elephas primigenius*, Dr. Falconer produced for the first time a synoptical table, showing the serial affinities of all the species of the Proboscidia, fossil and living, then known, of the former of which a large number were either discovered or determined by him. The same year he gave an account of the re-

markable Purbeck mammalian genus "*Plagiaulax*," discovered by Mr. Beckles near Swanage (*op. cit.* vol. xiii. p. 261); this was followed in 1862 by a second paper on the same subject (*op. cit.* vol. xviii. p. 348). Having occupied himself during several years with the special investigation of the mammalian fauna of the pliocene as distinguished from that of the quaternary period of Europe, he was conducted to the examination of the cave-fauna of England. In 1860 he communicated a memoir on the numerous ossiferous caves of Gower, explored or discovered by his friend Lieutenant-Colonel Wood (Quart. Journ. Geol. Soc. vol. xvi. p. 487). The existence of *Elephas antiquus* and *Rhinoceros hemitœchus* as members of the cave-fauna was then for the first time established, and the age of that fauna precisely defined as posterior to the boulder clay or period of the glacial submergence of England. In 1862 Dr. Falconer communicated to the British Association at Cambridge an account of *Elephas melitensis*, the pigmy fossil elephant of Malta, discovered, with other extinct mammals, by his friend Captain Spratt, C.B., in the ossiferous cave of Zebbug and elsewhere. This unexpected form presented the Proboscidia in a new light to naturalists. Further researches on the general questions concerning the same family appeared in a memoir published in the 'Natural History Review' in 1863, the title of which but inadequately indicated the range of the subjects discussed.

While exploring the Himalayas in his early days, Falconer's attention had been closely directed to the physical features which distinguished them from mountain-ranges in temperate regions, and more especially to the general absence from their southern valleys of the great lakes so common in corresponding situations in the Alps. When the hypothesis of the excavation of lake-basins by glacial action was brought forward, he took a share in the discussion and combated the view by an appeal to the contradictory evidence furnished by the Himalayas, the lakes of Lombardy, and the Dead Sea (Proceedings of the Royal Geographical Society, 1864, p. 38, and 'Reader,' March and April, 1864). In connexion with this subject it may be mentioned that his last public act was to advocate the grant of £100 by the Council of the Royal Society to Sir Henry James, for accurately determining by levelling the amount of depression of the Dead Sea below the level of the Mediterranean.

For nearly thirty years Dr. Falconer had been engaged more or less with the investigation of a subject which has lately occupied

much of the attention both of men of science and of the educated classes generally, viz. the proofs of the remote antiquity of the human race. In 1833, fossil bones procured from a great depth in the ancient alluvium of the valley of the Ganges in Hindostan were erroneously figured and published as human. The subject attracted considerable attention at the time in India. It was in 1835, while this interest was still fresh, that Dr. Falconer and Capt. Cautley discovered the remains of the gigantic miocene fossil tortoise of India, which by its colossal size almost realized the mythological conception of the tortoise which sustained the world on his back (Geol. Trans. 2nd ser. vol. v. 1837, p. 499).

About the same time several species of fossil Quadrumana were discovered in the Sewalik Hills, one of which was thought to have exceeded in size the Ourang-outang, while another was hardly distinguishable by micrometrical measurements from the living "Hoonuman" monkey of the Hindoos. Coupling these facts with the occurrence of certain existing species, and of the camel, giraffe, horse, &c., in the Sewalik fauna, and with the further important fact that the plains of the valley of the Ganges had undergone no late submergence, and passed through no stage of glacial refrigeration to interrupt the previous tranquil order of physical conditions, Dr. Falconer and Capt. Cautley were so impressed with the conviction that the human race might have been early inhabitants of India, that they were constantly on the look-out for the upturning of the relics of man, or of his works, from the miocene strata of the Sewalik Hills. In their account of the gigantic tortoise, after discussing the palæontological and mythological bearings of the case, they sum up by stating "the result at which we have arrived is, that there are fair grounds for entertaining the belief that the *Colossochelys Atlas* may have lived down to an early epoch of the human period and become extinct since" (Proc. Zool. Soc. 1844, p. 85).

Ten years later Dr. Falconer resumed the subject in India, while investigating the fossil remains of the Jumna. In May 1858, having the same inquiry in view, while occupied with his cave-researches, he communicated a letter to the Council of the Geological Society, which suggested and led to the exploration of the Brixham cave, and the discovery in it of flint implements of great antiquity associated with the bones of extinct animals. In conjunction with Professor Ramsay and Mr. Pengelly he drew up a report on the subject, which, communicated in the autumn of the same year to the Councils of the Royal and Geological So-

cieties, excited the interest of men of science in the case. Following up the same object, he immediately afterwards proceeded to Sicily to examine the ossiferous caves there, and discovered the "Grotto di Maccagnone," in which flint implements of great antiquity were found adhering to the roof-matrix mingled with remains of hyenas, now extinct in Europe. An account of this important case was communicated to the Geological Society (Quart. Journ. of Geol. Soc. 1859, vol. xvii. p. 99). Having examined the collection of M. Boucher de Perthes, on his route to Sicily, he was impressed with the authenticity of some of the flint implements discovered in the valley of the Somme, and urged his friend Mr. Prestwich, who is of the highest authority in this branch of geology, to proceed there and investigate the conditions of the cave. This led to Mr. Prestwich's celebrated memoir on the flint-yielding quaternary deposits of the Somme (Phil. Trans. 1859). Thus, in 1859, the subject of the antiquity of the human race, which had previously been generally discredited among men of science, was again launched upon fresh evidence in both the stratigraphical and the cave aspects. Since then it has been actively followed up by numerous inquirers, and Dr. Falconer himself was contemplating, and had indeed actually commenced, a work on "Primeval Man." In 1863 Dr. Falconer took an active share in the singularly perplexed discussion of the *cause célèbre* of the human jaw of Moulin Quignon; and, in the conference of English and French men of science held in France, he expressed doubts as to its authenticity, but in that guarded and cautious manner which was characteristic of him (Nat. Hist. Rev. 1863, p. 423). In the spring of last year he called attention in 'The Times' to the remarkable works of art by "primeval man" discovered by his friends Messrs. Lartêt and Henry Christy in the ossiferous caves of the Dordogne, and in September, in company with myself, proceeded to Gibraltar, to examine caves in which marvellously well-preserved remains of man and mammals, of great antiquity, had been discovered. Before starting, we drew up a preliminary report on the specimens brought from Gibraltar to this country, which was presented to the British Association at Bath. He attached great importance to the results of this expedition, and on his return home at once commenced a careful examination of the fossil remains of Gibraltar, the results of which he intended to elaborate, in conjunction with those of his explorations in Sicily, into a separate work on the Mediterranean Cave-Fauna.

But his labours were at an end. He suffered considerably from

exposure and fatigue on his return journey through Spain from Gibraltar; so that the inclement winter told with additional force upon a constitution naturally susceptible of cold, and weakened by long residence and exposure in India. On the 19th of January, on his return from a meeting of the Council of the Royal Society, he felt depressed and feverish. The attack speedily became developed into acute rheumatism, complicated with bronchitis and congestion of the lungs, which proved fatal on the morning of the 31st of January. On the 4th of February his remains were committed to their last resting-place, at Kensal Green, in the presence of a large number of his sorrowing friends and fellow-labourers.

From what has been said, it is obvious that Falconer did enough during his lifetime to render his name immortal in science as one of the greatest palæontologists who ever lived. But the work which he published was but a small fraction of that which he accomplished. The amount of scientific knowledge which has perished with him is prodigious; for he was cautious to a fault; he never liked to commit himself to an opinion until he was sure that he was right; and he has died in the fulness of his power, before his race was run. In summing up the character of this remarkable man, those who knew him well can best appreciate his fearlessness of opposition when truth was to be evolved, his originality of observation and depth of thought, his penetrating and discriminating judgment, his extraordinary memory, the scrupulous care with which he ascribed to every man his due, and his honest and powerful advocacy of that cause which his strong intellect led him to adopt; whilst they, more than others, will have occasion to deplore the death of a staid adviser, a most genial companion, and a hearty friend. His place, indeed, no man can fill.

Thomas Sunderland Harrison, M.D., died at Bath on the 22nd of December, 1864, aged 64. He was at one time lecturer on Midwifery at the Charlotte Street School of Medicine, and was Senior Physician to the Farringdon Dispensary. In later life he had been for many years a Magistrate of the county of Somerset. He became a Fellow of this Society on the 16th of January, 1844.

William Sharp MacLeay, Esq., M.A., &c., was born in London on the 30th of July, 1792, the eldest son of the late Alexander MacLeay, F.R.S., so well known in the annals of this Society, as whose Secretary he acted for the long period of twenty-seven years, or from 1798 to 1825, when he proceeded to Australia

in the capacity of Colonial Secretary, and where he afterwards filled the post of Speaker to the first Legislative Council of New South Wales.

Mr. W. MacLeay was educated at Westminster School and at Trinity College, Cambridge, where he graduated with honours, appearing in the list of Senior Optimes for 1814. On leaving the University he was appointed Attaché to the British Embassy in France, and shortly afterwards became Secretary to the Board for Liquidating British Claims in that country, which was established at the peace of 1815. In this capacity he resided for several years in the French capital, and had thus an opportunity of becoming intimately acquainted with Cuvier and the other eminent men of science who at that time gave lustre to the natural-history schools in Paris. Having discharged the duties of this office with great credit, Mr. MacLeay, on his return to England, was appointed by Mr. Canning in 1825 Commissioner of Arbitration to the Mixed British and Spanish Court of Commission for the Abolition of the Slave Trade, established at the Havannah. In 1830 he was advanced to the higher grade of Commissary Judge in the same Court, and in 1836 became Judge of the Mixed British and Spanish Court of Justice established under the Treaty of 1835.

For the manner in which he discharged the arduous and often delicate duties of these offices, Mr. MacLeay received repeated official approbation. In 1836 he returned to England, and in 1837 retired from the public service upon a superannuation allowance.

His long residence in a tropical climate rendered that of his native country either distasteful or noxious to him, and he consequently, in 1839, joined his family in New South Wales—presiding just before his departure over Section D at the Meeting of the British Association at Liverpool. From that period until his death he remained in comparative seclusion, devoting himself to multifarious studies, to the enlargement of the magnificent collection of insects founded by his father, and to the cultivation of the beautiful gardens attached to his residence at Elizabeth Bay, Sydney, which it was his chief pleasure to improve and to ornament with the choicest native and exotic plants. In this delightful retreat all those who possessed wisdom, wit, or a simple love for scientific truth were made welcome by a host who combined all three, and who in the society of those whom he liked and respected, not only astonished his hearers by the breadth and depth of his knowledge, but charmed them by his thorough geniality

and playfulness. Though bigots and pretenders of all kinds might have found reason to give a different account of the results of their personal intercourse with Mr. MacLeay, he was, to his friends and to all really anxious for information, such as above described. At this residence Mr. MacLeay died after a lingering illness on the 26th of January in the present year.

Mr. MacLeay, after his return from France, where perhaps he acquired his strong taste for zoological pursuits from the example and under the encouragement of such men as Cuvier, Geoffroy St. Hilaire, and Latreille, and especially, as we may suppose, of the latter, and until his departure for Australia in 1839, published numerous papers, chiefly relating to entomological subjects. These papers, up to the year 1839 or 1840, were usually published in the 'Linnean Transactions;' but upon the establishment of the Zoological Society, in which, in conjunction with the late Mr. Vigors, he was very active, most of his more important communications appear to have been given in the 'Zoological Journal' or in the 'Transactions' or 'Proceedings' of the new Society, or in the 'Annals and Magazine of Natural History.' But, besides these scattered memoirs, we are indebted to Mr. MacLeay for two works of very considerable importance. The former of these, entitled "Horæ Entomologicæ, or Essays on Annulose Animals," is contained in two volumes, of which the first appeared in 1819, soon after his return from France, and the second in 1821. And it is a curious circumstance that a work which was destined to be exposed to so much criticism should from the first appear to have been doomed to destruction, as if the spirit of conservatism in science were determined to oppose the introduction of new and startling fundamental views. Nearly the whole impression of the first volume was destroyed by fire on the premises of the publishers, whilst the second edition was as near perishing by the opposite agency of water, an unusual rise of the Thames drowning a large part of it. The work, moreover, having escaped these perils, was subsequently exposed to the fortunately less destructive agencies of unfriendly critics, and, it may be added, to the still more dangerous support of injudicious friends.

It would be out of place here to enter into an analysis or criticism of this work, in which, however, it may be said are contained some of the most important speculations as to the affinities or relations of various groups of animals to each other ever offered to the world, and of which it is almost impossible to overrate the suggestive value. Speculative ideas, however, of such a general

kind, even in the hands of their author, are apt to be carried too far in their application, and, when they fall into those of other speculators of less information and less capacity, can hardly fail to be grossly misused. This has been the case with Mr. MacLeay's ideas; and thus, as observed by the author of a notice in the 'Reader,' of his labours, the name of the "circular system" and of "quinarianism" became almost bywords; and the work of one of the most thoughtful and original of English biologists sank at one time into most unmerited neglect.

Mr. MacLeay's second important work, entitled "Annulosa Javanica, or an Attempt to illustrate the Natural Affinities and Analogies of the Insects collected in Java by Thomas Horsfield," appeared, in the 4to form, in 1825. And in 1838 he published a similar work on the "Annulosa of South Africa," also with coloured figures.

The principal papers from his pen that have appeared in our 'Transactions' are:—

1. On the Identity of certain General Laws which have been lately observed to regulate the Natural Distribution of Insects and Fungi (vol. xiv.).

2. On the Insect called *Oistros* by the Ancient Greeks and *Asilus* by the Romans (*ibid.*).

3. Anatomical Observations on the Natural Group of Tunicata, &c. (*ibid.*).

4. On the Structure of the Tarsus in the Tetramerous and Trimerous Coleoptera of the French Entomologists.

5. Remarks on the Comparative Anatomy of certain Birds of Cuba, with a view to their respective places in the System of Nature, or to their relations with other Animals (vol. xvi.).

After his retirement to Australia, I am not aware that Mr. MacLeay published anything; but he has left, as I am informed, a large collection of manuscripts on all subjects of natural history, which, as greatly to the advantage of science, it would be extremely desirable should be carefully examined, and those among them fitted for the purpose published. There is reason, I believe, to hope that this may be done, and that we may, as in former days, again see the pages of the 'Linnean Transactions' graced by articles bearing the honoured name of William Sharp MacLeay.

Jean Jacques de Roches, M.D., one of the oldest Fellows of the Society, into which he was elected on the 18th of November, 1806, died on the 18th of April, 1864, and his decease should have

been announced at the last Anniversary; but the news of it had not at that time reached me.

He was born in 1780, at Geneva, where his father was a Minister of the Gospel and Professor of Oriental Languages in the Faculty of Theology. His son was thus favourably placed as regards education, and he appears to have fully availed himself of the opportunities afforded him.

In 1798, when Geneva fell into the French power, he proceeded to Berlin, chiefly with the view of acquiring the German language. But it was in that city that he also determined upon the choice of a profession, selecting that of medicine. Accordingly, instead of returning to Geneva, he repaired to Edinburgh, at that time perhaps the most celebrated school of medicine in Europe. At that University M. de Roches soon became distinguished for his zeal and talents. In the course of his residence he was a Member and President of the Royal Medical Society, in whose meetings he took a very active part. And during this period of his life he made numerous friends among the most distinguished men of the day. Amongst these may be named especially the Marquis of Huntley, afterwards Duke of Gordon, to whose kind offices in after life he owed a good deal, and Dr. Reeve, an eminent practitioner in Edinburgh, and father of the present Editor of the 'Edinburgh Review.' He took his Doctor's degree about 1803, when he quitted Edinburgh for London, where at first he occupied the post of Medical Officer to a Dispensary, and afterwards established himself in private practice in the neighbourhood of Spitalfields. He did not, however, remain very long in this capacity. Having been offered a medical commission in the British Army then in Portugal, he appears to have given up his practice with a view of accepting the offer; but before doing so he was desirous of once more seeing his parents and of visiting his native city. He accordingly set out for Geneva in company with his friend Dr. Reeve, by a long and circuitous route through Germany. Finding his father in a failing state of health, Dr. de Roche's filial affection induced him to relinquish his prospects in the British service; and he resolved upon remaining in Geneva, and of there pursuing the practice of his profession, in which he speedily acquired great repute. In 1811, as a mark of the esteem in which he was held, he was named Professor of Medicine at the Academy—a chair, however, which circumstances rendered merely honorary.

When Geneva was restored to independence, in 1813, Dr. de Roches entered with great ardour into politics, and was elected

one of the original members of the Representative Council—a post he continued to occupy almost without interruption till he was raised to the honour of a seat in the Council of State in 1830. Up to this time he had continued the practice of his profession, which he now quitted in order to devote himself wholly to the discharge of his public duties. His efforts in a public capacity appear to have been directed to matters of hygiene, the institution and regulation of schools and prisons, and the establishment of a Penitentiary and of a Lunatic Asylum. In 1842, in consequence of political changes, Dr. de Roches vacated his seat in the Council, but nevertheless continued, as long as his strength endured, to discharge in the most conscientious manner all the duties of a good citizen.

The Rev. George Spence, LL.D., was one of the oldest Fellows of the Society, having been elected on the 6th of February, 1827. He died on the 13th of August, 1864, at Lee in Kent, in his 71st year.

W. J. Hawke Spink, M.R.C.S.E., Esq., died at Norton-Malton, Yorkshire, suddenly, of disease of the heart, on the 23rd of February last, aged 45.

Mr. Spink was the nephew and pupil of the late Dr. Spink of Tadcaster, whom he for some years assisted in practice. At his uncle's death, having independent means, he gave up the intention of following the medical profession, and retired to Norton, where he possessed other property. Being a lover of natural history, a botanist, and entomologist, during his retirement he had taken up a special branch of the latter science, namely the collection, classification, and description of a variety of Cocoons, British and foreign,—singular to say, a somewhat neglected subject, and which, had he lived to work it out, doubtless would have formed a speciality of great interest to the natural historian. With the view of laying the result of his labours before his brother naturalists, he had but recently, at the recommendation of Dr. Henry Scott, been proposed and elected to the Fellowship of this Society. But in the very act of accomplishing this work, at a comparatively early age and in the prime of life, he was taken from among us. The perfection of most branches of science owes much to men taking up unhandled subjects, or bringing to light objects of interest from some unbeaten track. In this sense we must admire the labours of Mr. Spink, who was never tired of peering into old trees, or turning up dead leaves, to perfect an interesting speciality, his labours in which, had he been

permitted to pursue them, would have done credit to himself, science, and the Society.

Ludolf Christian Treviranus, M.D., Professor of Natural History and Botany, and Quiescent Director of the Botanical Gardens at Bonn, was born at Bremen, on the 10th of September, 1779. His education, which was commenced in the schools of his native town, was continued first in the University of Göttingen, and afterwards at Jena, where he took his degree of Doctor of Medicine in the year 1801. And it was at this early period of his career that he determined to devote himself with all his power to the cultivation of science,

> "Ne vita transeat ceu fumus
> In auras abit, vel in fluctus spuma,"

as related by himself sixty-one years afterwards; and perseveringly did he keep to this resolve. He entered upon the practice of medicine in his native city, and in 1807 had acquired such a reputation as to be appointed Lecturer in the Lyceum. But in 1812 he moved to Rostock, where he was appointed Professor of Botany, in succession to Link, who at the same time was translated to Breslau, where Treviranus, strange to say, again succeeded him when Link took possession of Willdenow's chair in Berlin. There he remained till 1830, when the retirement of Nees v. Esenbeck from the chair of Botany at Bonn determined Treviranus to remove to that city as his successor; and there he remained for the rest of his life, although his frequent ill health obliged him to relinquish the immediate management of the Botanical Gardens, which had at first formed part of his charge.

Though active in all branches of botanical science, as is shown in his numerous works and communications to various societies, Treviranus's attention was chiefly directed to the phenomena presented by living plants, and to the accurate determination of species. He was well versed in botanical literature, and took every opportunity of adding to his botanical library. His numerous writings afford abundant proof of the extent of his knowledge, and of the acuteness of his critical faculty. Though so eminent a botanist, it has unfortunately happened that the Gesneracean genus dedicated to his name by Willdenow has since been referred to *Achimenes* of R. Brown, so that the name of Treviranus is deprived of an honour so justly its due. He was made a Foreign Member of this Society on the 4th of May, 1830, and died on the 22nd of May, 1864, two days before our last Anniversary.

The Secretary also announced that nineteen Fellows had been elected since the last Anniversary.

At the Election which subsequently took place, George Bentham, Esq., was re-elected President; William Wilson Saunders, Esq., Treasurer; and George Busk, Esq., and Frederick Currey, Esq., Secretaries. The following five Fellows were elected into the Council, in the room of others going out:—viz. The Rev. Hamlet Clark, Robert Hogg, LL.D., Alfred Newton, Esq., J. T. B. Syme, Esq., and E. H. Vinen, M.D.

Mr. H. T. Stainton, on the part of the Auditors of the Treasurer's Accounts, read the Balance Sheet, by which it appeared that the total Receipts during the past year, including a Balance of £538 17*s.* 5*d.* carried from the preceding year, amounted to £1780 7*s.* 7*d.*, and that the total Expenditure during the same period amounted to £1365 8*s.* 5*d.*, leaving a Balance in the hands of the Bankers of £414 19*s.* 2*d.*

June 1, 1865.

George Bentham, Esq., President, in the Chair.

The President nominated J. J. Bennett, Esq., J. D. Hooker, M.D., John Lubbock, Esq., and W. W. Saunders, Esq., Vice-Presidents for the ensuing year.

W. S. M. D'Urban, Esq., was elected a Fellow.

The following Papers were read, viz.:—

1. "Remarks on the best methods of displaying *Entozoa* in Museums;" by Thomas Spencer Cobbold, M.D., F.R. & L.SS. (See 'Zoological Proceedings,' vol. viii.)

2. "On Animal Individuality, from an Entozoological point of view;" by the same. (See 'Zoological Proceedings,' vol. viii.)

3. "Contributions towards a Monograph of the Species of Annelides belonging to the *Aphroditacea*, containing a List of the known Species, and a Description of some new Species contained in the Collection of the British Museum;" by William Baird, M.D., F.L.S. (See 'Zoological Proceedings,' vol. viii.)

4. "Synopsis of the *Diptera* of the Eastern Archipelago, discovered by Mr. Wallace, and noticed in the Journal of the Linnean Society;" by Francis Walker. Esq., F.L.S. (See 'Zoological Proceedings,' vol. ix.)

June 15, 1865.

George Bentham, Esq., President, in the Chair.

Joseph S. Baly, Esq., and the Rev. William Colenso, M.A., were elected Fellows.

Mr. Syme, F.L.S., exhibited a living plant of *Cephalanthera rubra*, found by Mr. G. S. Wintle, in beech-woods, in Gloucestershire.

The following Papers were read, viz.:—

1. "Descriptions of 52 new species of *Phasmidæ*, from the Collection of W. W. Saunders, Esq., V.P.L.S., with Remarks on the Family;" by H. W. Bates, Esq. Communicated by Mr. Saunders. (See 'Transactions," vol. xxv. Part 2.)

2. "On two new Tropical African Genera of *Anonaceæ*;" by Professor Oliver, F.R.S., F.L.S., &c. (See 'Botanical Proceedings, vol. ix.)

3. "Notes on a Collection of *Algæ* procured in Cumberland Sound, by Mr. James Taylor, and Remarks on Arctic Species in general;" by George Dickie, M.D., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

4. "Supplementary Observations on the *Sphæriæ* of the Hookerian Herbarium;" by Frederick Currey, Esq., M.A., F.R.S., Sec. L.S. (See 'Transactions,' vol. xxv. Part 2.)

5. "On the Asymmetry of the *Pleuronectidæ*, as elucidated by an examination of the Skeleton in the Turbot, Halibut, and Plaice;" by Ramsay H. Traquair, M.D., Demonstrator of Anatomy in the University of Edinburgh. Communicated by Professor Huxley, F.R. & L.SS. (See 'Transactions, vol. xxv. Part 2.)

Receipts and Payments of the Linnean Society from May 1, 1864, *to April* 30, 1865.

	£	*s.*	*d.*
Balance in the hands of the Bankers at the last audit ...	538	17	5
Admission Fees	132	0	0
Compositions	310	10	0
Annual Contributions of £1 1*s.*	2	2	0
Do. do. of £2 2*s.*	42	0	0
Do. do. of £3 0*s.*	522	3	0
Transactions and Journal sold	148	4	8
Dividends on Consols	38	0	6
Donation from the Rev. Dr. Garnier	10	10	0
Legacy from B. Botfield, Esq., M.P.	36	0	0
	£1780	7	7

	£	*s.*	*d.*
Insurance	15	0	0
Repairs and Furniture	12	18	11
Coals, Gas, Tea, Postage, &c.....	93	15	11
Salaries	195	0	0
Expenses of the Society's Publications	958	10	3
Books purchased.....	56	7	4
Bookbinding	19	1	0
Commission	14	15	0
	£1365	8	5
Balance in the hands of the Bankers	414	19	2
	£1780	7	7

W. WILSON SAUNDERS, *Treasurer.*

The foregoing Accounts have been examined, and the Balance in hand found to be correctly stated at £414 19*s.* 2*d.*

GEORGE BENTHAM, *President.*
GEORGE BUSK, *Secretary.*

H. T. STAINTON,
W. FRED. SAUNDERS.

May 22nd, 1865.

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PROCEEDINGS

OF THE

LINNEAN SOCIETY OF LONDON.

(SESSION 1865–66.)

November 2, 1865.

George Bentham, Esq., President, in the Chair.

Arthur, Viscount Walden, Dr. Bhan Dagee, and J. B. Langley, Esq., were elected Fellows.

Dr. Prior, F.L.S., exhibited specimens of *Benthamia fragifera*, with ripe fruit, grown at Tetton House, Kingston, near Taunton.

It was moved by Mr. Saunders, seconded by Dr. Thomson, and carried unanimously,

"That this Meeting is desirous of recording, at the earliest opportunity, the sincere and profound regret which it has felt at the death of Sir William Jackson Hooker, who, during so many years had been the acknowledged head of Botanical Science in Britain, the labours of whose life had been devoted to giving at once a scientific and a practical character to the study of the Vegetable Kingdom, not only by his own numerous and valuable works, but by the encouragement and assistance afforded to every working botanist, at home and abroad, with whom he was brought into contact.

"The Meeting is especially desirous of giving expression to its grateful recognition of the liberality with which Sir William Hooker opened his most extensive Herbarium and Library to the

use of Botanists, and of which this Society has fully felt the benefit, in the numerous papers read at its Meetings, which could not have been prepared without such assistance.

"That the Meeting also earnestly desires to express to Lady Hooker its sincere and respectful condolence, and to assure her of its deep sympathy in her affliction."

The following Papers were read, viz.:—

1. "On *Hillebrandia*, a new genus of *Begoniaceæ*;" by Professor Oliver, F.R.S., F.L.S., Keeper of the Kew Herbarium. (See 'Transactions,' vol. xxv. part 3.)

2. "On the Law of Leaflet-genesis;" by Harland Coultas, Esq. Communicated by E. Newman, Esq., F.L.S.

3. "Enumeration of Indian *Lemnaceæ*;" by Mr. Sulpiz Kurz, Curator of the Herbarium of the Royal Botanic Gardens, Calcutta. Communicated by Dr. Thomas Anderson, F.R.S. & L.S. (See 'Botanical Proceedings,' vol. ix.)

4. "*Lichenes* Novæ Zelandiæ, quos ibi legit anno 1861 Dr. Lauder Lindsay;" by William Nylander, M. & Ph.D., late Professor of Botany in the University of Helsingsfors, Russia. Communicated by Dr. Lindsay. (See 'Botanical Proceedings,' vol. ix.)

5. "List of *Fungi* collected in Otago, New Zealand;" by W. L. Lindsay, M.D., F.L.S.

6. "Letter from Swinburne Ward, Esq., to Sir W. J. Hooker, on the Coco de Mer (*Lodoicea Seychellarum*) in the Island of Praslin." (See 'Botanical Proceedings,' vol. ix.)

November 16, 1865.

George Bentham, Esq., President, in the Chair.

Sir David Barclay, Bart., the Rev. William Allport Leighton, Capt. Henry Pulleine, George Sigerson, M.D., and Marmaduke Wilkin, Esq., were elected Fellows.

The following Papers were read, viz.:—

1. "Notes on *Medicago sativa*, as apparently affording facilities for the intercrossing of distinct flowers;" by the Rev. George Henslow, M.A., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

2. "Contributions to a Monograph of the *Aphroditacea*; part 2;" by William Baird, M.D., F.L.S. (See 'Zoological Proceedings,' vol. ix.)

3. "On the Spicula of the Regular *Echinoidea*;" by Charles Stewart, Esq. Communicated by Professor Huxley, F.R.S. & L.S. (See 'Transactions,' vol. xxv. part 3.)

4. "Account of a newly discovered British Fish, of the Family *Gadidæ* and the genus *Couchia*;" by Jonathan Couch, Esq., F.L.S. (See 'Zoological Proceedings,' vol. ix.)

5. "Some Observations on British *Salpæ*;" by W. C. McIntosh, M.D., F.L.S. (See 'Zoological Proceedings,' vol. ix.)

December 7, 1865.

George Bentham, Esq., President, in the Chair.

John Gwyn Jeffreys, Esq., and the Rev. Samuel Tarratt Nevill were elected Fellows.

Dr. Kirk, F.L.S., exhibited specimens of the "Tsetse Fly," received by him from the Basle Mission, near Accra, West Africa, a locality in which that insect has hitherto been unknown. The cattle there had suffered for some time, and had died in great numbers, from a disease which was eventually found to be due to the attacks of the "Tsetse."

The following Papers were read, viz.:—

1. "Notes on some of the Climbing-Plants near Desterro, in South Brazil;" by Herr Fritz Müller, in a letter to Charles Darwin, Esq., F.R.S. & L.S. (See 'Botanical Proceedings,' vol. ix.)

2. "Remarks on the genus *Moringa*;" by N. A. Dalzell, Esq., Superintendent of the Botanical Gardens, Bombay. (See 'Botanical Proceedings,' vol. ix.)

3. "On *Arthonia melaspermella*, Nyl.;" by W. Lauder Lindsay, M.D., F.L.S., &c. (See 'Botanical Proceedings,' vol. ix.)

4. "On a double-flowered variety of *Orchis mascula*;" by Maxwell T. Masters, M.D., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

December 21, 1865.

George Bentham, Esq., President, in the Chair.

The Rev. Thomas Wiltshire was elected a Fellow.

The Secretary read a letter from Sir Charles Wentworth Dilke, Bart., dated "Alice Holt, by Farnham, Surrey," announcing that a specimen of the rare Gyr-falcon had just been killed by one of his keepers.

The following Papers were read, viz.:—

1. "On the Metamorphosis of *Chloëon* (*Ephemera dimidiatum*);" by Sir John Lubbock, Bart., F.R.S., V.P.L.S., &c. (See 'Transactions,' vol. xxv. part 3.)

2. "Observations on the habits, history, and microscopic character of the *Cynips Rosæ*;" by Hammett Hailey, Esq., F.L.S.

3. "On Amber;" by Philip John Butler. Communicated by Buxton Shillitoe, Esq., F.L.S.

4. "On some Helminthological Experiments by Professor Leuckart, and on the Relationship existing between the Free and Parasitic Nematoids;" by H. C. Bastian, M.A., M.B., F.L.S.

January 18, 1866.

George Bentham, Esq., President, in the Chair.

The Rev. Charles Clarke, Daniel Giraud Elliot, Esq., Henry Guard Knaggs, M.D., William John MacLeay, Esq., and C. A. Wilson, Esq., were elected Fellows.

Dr. St. Brody, F.L.S., exhibited a packet of "Introduced Plants," collected by himself during the past year, chiefly in the neighbourhood of Gloucester, and a few of which he believed to be new to Britain.

The following Papers were read, viz.:—

1. "Florula of Banda;" by M. P. Edgeworth, Esq., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

2. "On some new British *Polynoina*;" by E. Ray Lankester, Esq. Communicated by John Gwyn Jeffreys, Esq., F.R.S. & L.S. (See 'Transactions,' vol. xxv. part 3.)

Read also two letters, communicated by Dr. Hooker, V.P.L.S., —the one addressed to him by Charles J. Meller, Esq., dated "Bourbon, December 3rd, 1865," and containing some notes on the Botany of the Islands of Bourbon and Madagascar; the other from Swinburne Ward, Esq., dated "Government House, Seychelles, December 5th, 1865," and giving some further information with respect to the "Coco de Mer" (*Lodoicea Seychellarum*).

February 1, 1866.

George Bentham, Esq., President, in the Chair.

Christopher Edmund Broome, Esq., was elected a Fellow.

The following Paper was read, viz.:—

"On some points in the Anatomy of the *Echidna Hystrix*;" by

St. George Jackson Mivart, Esq., F.L.S., Lecturer on Comparative Anatomy at St. Mary's Hospital. (See 'Transactions,' vol. xxv. part 3.)

February 15, 1866.

George Bentham, Esq., President, in the Chair.

William Bowman, Esq., William Bull, Esq., Charles Stewart, Esq., Henry Trimen, M.B., and Edward Woakes, M.D., were elected Fellows.

The following Papers were read, viz.:—

1. "Observations on the origin and geographical distribution of Gum Copal in Angola, West Tropical Africa;" by Frederick Welwitsch, M.D., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

2. "Contributions to the Lichen-flora of Northern Europe;" by W. Lauder Lindsay, M.D., F.L.S., &c. (See 'Botanical Proceedings,' vol. ix.)

3. A letter from Dr. Campbell, F.L.S., to the President, on the increase in the number of Cinchona Plants in the Neilgherry plantations.

March 1, 1866.

George Bentham, Esq., President, in the Chair.

The following Papers were read, viz.:—

1. "On Circulation and the Formation of Wood in Plants;" by Herbert Spencer, Esq. Communicated by George Busk, Esq., F.R.S., Sec. L.S. (See 'Transactions,' vol. xxv. part 3.)

2. "Note on the Existence of the true *Cyperus Papyrus*, L., in Palestine;" by the Rev. H. B. Tristram, M.A., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

3. "Memorandum on the genus *Thamnea*, Sol., and other *Bruniaceæ* contained in the South African Herbarium of the late Dr. Burchell, F.L.S.;" by Professor Oliver, F.R.S. & L.S., Keeper of the Kew Herbarium. (See 'Botanical Proceedings,' vol. ix.)

March 15, 1866.

George Bentham, Esq., President, in the Chair.

John B. George, Esq., and Colonel Charles Shelley were elected Fellows.

The following Papers were read, viz.:—

1. "Account of a Lusus Naturæ, a double-headed Water-Snake;" by John Shortt, M.D., F.L.S., M.R.C.P.L., &c. (See 'Zoological Proceedings,' vol. ix.)

2. "Descriptions of six new species of simple-fronded *Hymenophyllaceæ*;" by John Gilbert Baker, Esq. Communicated by Dr. Hooker, F.R.S., V.P.L.S. (See 'Botanical Proceedings,' vol. ix.)

3. "Lichenes Amazonici et Andini lecti a Dom. Spruce;" by the Rev. W. A. Leighton, B.A., F.L.S. (See 'Transactions,' vol. xxv. part 3.)

April 5, 1866.

George Bentham, Esq., President, in the Chair.

John Gilbert Baker, Esq., Charles Gainer, M.D., and Henry

Lee, Esq., were elected Fellows; and Mr. Thomas Edward was elected an Associate.

The following Papers were read, viz.:—

1. "On a new British *Fungus*;" by the Rev. M. J. Berkeley, M.A., F.L.S. (See 'Transactions,' vol. xxv. part 3.)

2. "On some undescribed species of *Teredo*, from Australia;" by E. P. Wright, M.D., F.L.S. (See 'Transactions,' vol. xxv. part 3.)

3. "Note on the presence of Stamens within the Ovarium of *Bæckea diosmæfolia*, Rudge;" by M. T. Masters, M.D., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

April 19, 1866.

George Bentham, Esq., President, in the Chair.

William Robinson, Esq., was elected a Fellow.

Sir Charles Bunbury, Bart., exhibited a cone of *Wellingtonia gigantea*, produced (with several others) at Great Barton, Suffolk, in the autumn of 1865, on a tree planted only two years previously, and now scarcely three feet high. Sir Charles had not been able to find male flowers on any plant of the same species at Barton.

Mr. Samuel Gurney, F.L.S., exhibited several eggs of the Emu, laid within the last few weeks, and stated that the *male* bird was at present incubating a considerable number. One of the eggs now exhibited was remarkable for its large size, bright green colour, and smooth surface. This egg had been deposited after an interval of three days, instead of four, which was stated to be the usual period.

The following Papers were read, viz.:—

1. "Notes on the Structure of *Myrtaceæ*;" by George Bentham, Esq., F.R.S., Pres. L.S. (See 'Botanical Proceedings,' vol. ix.)

2. "On the Structure of *Indigofera*, as apparently offering facilities for the intercrossing of distinct flowers;" by the Rev. George Henslow, M.A., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

3. "List of the Diurnal *Lepidoptera* recently collected by Mr. Whiteley in Hakodadi, North Japan;" by Arthur G. Butler, Esq., F.Z.S., Assistant, Zoological Department, British Museum. Communicated by William Carruthers, Esq., F.L.S. (See 'Zoological Proceedings,' vol. ix.)

May 3, 1866.

George Bentham, Esq., President, in the Chair.

George French Angas, Esq., and William Matchwick, Esq., were elected Fellows, and Dr. Nathan Pringsheim and Dr. W. P. Schimper were elected Foreign Members.

The following Papers were read, viz.:—

1. "Monograph of the recent British *Ostracoda*;" by George S. Brady, Esq. Communicated by Dr. Sclater, F.R.S. & L.S.

2. "On the Otolites of Fish, and their value as a test in verifying recent and fossil species;" by E. T. Higgins, Esq. Communicated by George Busk, Esq., F.R.S., Sec. L.S. (See 'Zoological Proceedings,' vol. ix.)

3. "Remarks on the Cranial and Dental Characters of the existing species of Hyæna;" by George Busk, Esq., F.R.S., Sec. L.S. (See 'Zoological Proceedings,' vol. ix.)

Read also a Letter from Dr. Masters, F.L.S., referring to the exhibition, at the last Meeting, by Sir Charles Bunbury, of *Sequoia* (*Wellingtonia*) *gigantea*, produced last autumn at Great Barton;

and calling attention to the fact that cones of that species had been formed in this country, and recorded in the 'Gardener's Chronicle' as far back as 1858.

The President announced that the first part of the Library Catalogue was now printed, and would be ready for publication in a few days, at the price of ten shillings to the public, and seven shillings and sixpence to the Fellows.

May 24, 1866.

Anniversary Meeting.

George Bentham, Esq., President, in the Chair.

This day, the Anniversary of the Birth of Linnæus, and the day appointed by the Charter for the Election of Council and Officers, the President opened the business of the Meeting with the following Address:—

Gentlemen,

In reviewing the proceedings of our Society during the past year, it will be seen that we have continued to devote our attention chiefly to the development of the two great means we possess of promoting biological science, our publications and our library. In the general plan of our octavo Journal we have thought it expedient to make a slight alteration. Owing to the number of Journals in this country through which zoologists can procure the speedy issue of purely systematic unillustrated contributions, the papers they have presented to us have been chiefly of a character requiring quarto illustrations; and it was found that if the old plan had been adhered to, of making up each number of the Journal of equal moieties of the two great branches of our science, the publication of important botanical contributions would be frequently delayed, from the deficiency of corresponding zoological matter. From the present volume, therefore, we have adopted the separate issue of zoological and botanical parts; and the botanists in this respect are already considerably in advance of the zoologists. In our quarto Transactions, on the other hand, the zoologists occupy the principal part. Our usual issue

last autumn was of unprecedented bulk, and has been acknowledged as comprising contributions of great scientific value. Including the extra part published in the summer, our year's Transactions are illustrated with 43 plates, of which 23 are zoological and 20 botanical; and we have also increased the number of plates introduced into our Journal. Our next quarto part, for which several plates, chiefly zoological, are already in hand, will complete our 25th volume; and a general index to the whole series is in preparation. It is hoped also that in the course of the autumn or winter two detached papers of great interest, illustrated by a considerable number of plates, will be delivered to you as the first two parts of the 26th volume—viz. Mr. Brady's Monograph of Ostracoda, read at your last meeting, and a selection of the most interesting botanical novelties collected in West TropicalAfrica by Dr. Welwitsch, an account of which he has promised to lay before you on an early day.

Our Library has received considerable additions. The valuable conchological works presented several years since by the late Mr. Cuming, but which he had temporarily borrowed, are now definitively lodged on our shelves. Several important works have been presented,—among which I may specially mention the Zoology of Beechey's Voyage, presented by Dr. J. E. Gray, and very numerous Transactions and Journals of Natural-History Societies, as well as separate works contributed by their authors. We have also expended on the library a sum of about £65, which has enabled us to increase the number of periodicals we subscribe to, and to procure, besides several indispensable works of reference, nearly all the works entered by our fellows in the book of Desiderata, including Malherbe's splendid monograph of Picidæ.

The printing of our Library Catalogue has occupied rather more time than we calculated upon, our Librarian having been most scrupulous in his attention to the accuracy of its details. The first part, however, containing under an alphabetical arrangement all separate works and detached papers, as well as complete Journals published by private editors independently of scientific bodies, received by the Society up to June 1864, is complete. As the second part, comprising Transactions of Societies and Journals in progress, will yet require some months to complete, the Council have thought it would be more satisfactory to the Fellows to publish the first part at once; and it is now on sale at the Society's apartments.

Owing to the heavy cost of our publications, we have not added

much to our pecuniary reserve. We have, however, kept our bills paid off even more closely than usual, and duly invested the £100 presented to the Society by the executors of the late Sir William J. Hooker, carrying our funded property to a total of £1400. We commence also the new year with a larger cash balance in hand than usual.

I last year expressed a hope that some means might be found for establishing a closer connexion between the Linnean Society as the head of biological science in this country, and special societies established for the cultivation of particular branches of it. I trust that the step which has been taken in this direction may lead to successful results, arrangements having been made, by which the Zoological Society has been allowed during the next Session to hold its Scientific Meetings in our rooms, on the Thursdays alternating with our own. A nearly similar application, since made by the Entomological Society, has been favourably entertained by the Council; but the details are still under consideration.

The number of Fellows elected during the year has been greater than usual; but our losses have been severe, imposing a heavy task on our Secretary in those interesting obituary notices which he is accustomed to lay before you. I have no desire to anticipate these in any respect; but, from personal feeling, I cannot refrain from alluding to the blank left by the death of the two eminent men with whom I had for so long been on terms of the most intimate friendship, and to whom I owe so much. Sir William Jackson Hooker and Dr. Lindley, the one for forty-two, the other for thirty-nine years had been more or less connected with my career; for there is not one of my botanical works or publications in which I have not benefitted by that assistance, advice, or encouragement they were always ready to bestow upon all contributors to the science they both so zealously pursued. They are also ever present to my mind as the last of the chief actors in bringing to a successful conclusion that second great revolution in the science of botany, nearly the whole course of which it has been my fate to witness. Half a century back, when first I entered upon the study of plants, the first and greatest revolution in natural science, the reduction to order of the primitive chaos by the establishment of the Linnæan genera, species, and binomial nomenclature, had for some time been fully accomplished. But the benefits derived from this organization were so keenly felt, its final triumph over the violent opposition it had met with from various quarters so strong in the recollection of botanists, that any at-

tempt at further improvement was generally scouted as an infringement of established laws. The new Jussieuan system, although it had been promulgated for twenty-seven years, was scarcely known out of France. In Germany and the North it was quite ignored. In England, Robert Brown's labours had already established him as one of the great reformers of the science; but his works were not in general circulation, and the Linnæans still reigned paramount. It was only in France that De Candolle's 'Flore Française' had brought the study of plants according to their natural affinities within reach of the merest tyro; and many were those I then knew, whom, like myself, that work alone had attracted to the science, notwithstanding the ridicule and abuse with which it was assailed by the would-be conservatives of the time, several of whom, like Picot de Lapeyrouse, had then considerable influence. I returned to England temporarily in 1823, and finally in 1826, with my firm conviction of the paramount importance of the natural system strengthened by the personal acquaintance with Jussieu, De Candolle, and other eminent French botanists to which I had been admitted, and could only feel surprise at the admiration felt in this country for those Linnæan classes which I had only half learnt as a matter of history. The first of our botanists from whom I received marked attentions and civilities was our then President, the late Sir James Edward Smith; and he vainly endeavoured to impress me with the simplicity, practical utility, and consequent superiority of the Linnæan arrangement. Even those who had begun to look upon the study of natural orders as a higher branch, to be entered upon by botanists who were already proficient in the science, insisted that it was unsuited for beginners or for those who confined themselves to local botany. The few admirers of Jussieu in this country then generally admitted as an undeniable axiom a proposition retained to this day, by force of habit, in the Preface to one of our standard Floras (which gives it up in practice), that long experience "has proved to every unprejudiced mind that no system can be compared to that of the immortal Swede, for the facility with which it enables any one, hitherto unpractised in Botany, to ascertain the genus of some previously unknown plant." To this I could only oppose my own experience, and that of friends, who appeared to me to have determined most of the plants of their neighbourhood, by the sole aid of the 'Flore Française,' far more readily than those who had invariably to begin by counting stamens and pistils. With these impressions on my mind, it was but natural

that the proffered friendship of the two men who were already turning the study of botany in this country into its proper channel should have induced me to devote my future life to the same science. They both of them evinced a liberality, then rare, in the exchange not only of specimens but of ideas, and in their communications and assistance to young aspirants, no fear of rivalry ever entering into their minds. Without a taint of selfishness, they both had the progress of science thoroughly at heart; both of them saw that the general adoption of a natural classification was one great means of carrying it out, and applied themselves to that purpose, each in his own way. Hooker's was chiefly by the force of example and the general influence he had acquired. Ever courteous with those whose views were different from his own, he gave way for a time in those elementary and local publications in which his position in the Scotch Universities did not leave him independent action; but in his teachings he strove to familiarize his pupils with the leading features of the natural orders; he adopted them exclusively in the arrangement of his collections, in his extensive distributions, in his wide-spread correspondence, and in those numerous works on exotic plants which were so rapidly diffused over the botanical world. Lindley's advocacy was more uncompromising and controversial, but it was accompanied by the same active liberality; and his teachings were backed by such powerful arguments and by works of such high scientific value, that the part he took in effecting the reform was as great as that of Hooker; and both lived to see the final abandonment of the Linnæan classes in this country, even for the most trifling local catalogue.

In zoology it appears to me that a similar change has been effected, not by the nominal substitution of one specific system for another, but by a gradual recognition of the principle which I believe now governs the study of all branches of natural science, but which was laid down by Linnæus for genera only. This is, that groups of beings of every degree, from the primary class to the lowest race, are not to be limited by some one character in outward form taken *à priori* as essential, but by the comparative study of every peculiarity in outward form, internal structure, constitution, and habit of life. One consequence has been the great development given in recent years to the study of animal and vegetable anatomy and physiology, and to the biological history of the individual, the species, the genus, or the class; whilst systematic zoology and botany, once supposed to make up almost the

whole of the science, is now, by a species of reaction, often treated with contempt. This is, however, surely a mistake. Without a good system, clearly identifying the subjects of observation, no biological inquiries can have any practical advantage; and, in all our reviews of the progress of our science, we ought equally to appreciate the labours of the systematist, the physiologist, and the biologist, provided that each in his own department has duly called in aid the results obtained in the others.

In laying before you a few notes on some of the principal publications in Natural History, since I last referred to the several departments (in my addresses of 1862, 1863, and 1864) I have, in respect of zoology, been enabled to avail myself of the kind assistance of Mr. W. S. Dallas, of the Museum at York. On applying to him for data on which to found this part of my address, he has remitted to me a general sketch which appears so well adapted to the purpose, that I cannot do better than to insert it at length in his own words, as giving a far better account of the progress of the science than I could otherwise have obtained. I would myself, however, particularly call your attention to the 'Record of Zoological Literature,' of which the importance is by no means overrated by Mr. Dallas, who takes, I believe, himself a large share in the labour of its preparation. Not only is it earnestly to be desired that it may receive sufficient support to ensure its continuance, but it is to be hoped that a similar compilation may be undertaken for botanical literature. It is one of those works which, for the sake of the real working man of science, every amateur who has the means ought to encourage.

In approaching the consideration of the literature of Zoology during the past two years, we are met at the outset by the difficulty, that the mass of memoirs of more or less importance published on different zoological subjects is so enormous that those to which we can refer must bear a very small proportion to the whole; and the task of selection is thus rendered by no means easy. In the following notes the endeavour has been to call attention to those papers and other works which seem to have done most for the advancement of our knowledge of the particular department to which they relate, or promise to lead to general zoological progress; but even these are so numerous that in many cases little more can be done than to indicate their titles.

Of works directed specially to the advancement of our general zoological knowledge, the most important that has appeared for

many years, perhaps since the second edition of Cuvier's Règne Animal, is Bronn's 'Klassen und Ordnungen des Thierreichs,' which is still in progress,—the portion treating of the Mollusca having been continued since the death of the distinguished projector of the work, and completed last year by Dr. Keferstein, whilst the section relating to the Arthropod classes has lately been commenced by Dr. Gerstäcker. This work is remarkable for the immense amount of information which is brought together in its pages, and for the copiousness of its illustrations. The 'Philosophia Zoologica,' of Professor Van der Hoeven, published at Leyden in 1864, may also be noticed here, although only as placing known facts occasionally in a somewhat new light. But the most important publication connected with the progress of general zoology, of the period over which we have to glance, is the first volume of the 'Record of Zoological Literature,' containing an abstract of the zoological works and papers published in 1864. For the production of this work, zoologists are indebted to Mr. Van Voorst, one of the Fellows of this Society, and to the zeal of Dr. Günther, of the British Museum, aided by a staff of well-known coadjutors. The enormous extent to which the literature of zoology has attained at the present day, may be judged from the fact, stated by Dr. Günther, that the 'Record' for 1864 forms a guide to scientific works and papers occupying more than 25,000 pages; and these do not constitute the whole of the publications of that year.

Taking now the several primary classes of the Animal Kingdom separately, we must refer, in the first place, to the great work of our distinguished Fellow, Professor Owen, the 'Comparative Anatomy and Physiology of Vertebrates,' two volumes of which, completing the anatomical review of the structure of vertebrate animals, have made their appearance. It will be unnecessary to attempt any criticism of the contents of these volumes. Other naturalists may dissent from Professor Owen's views as regards certain points both of classification and of the interpretation of anatomical facts; but they will nevertheless find in this book a clear enunciation of the results of widely extended researches.

The investigations of zoologists upon the class of Mammalia seem to have been directed of late more especially to two orders, the Chiroptera and the Cetacea, both of which present considerable and peculiar difficulties in their study; and the most important works upon this class lately issued have reference to these groups. The Smithsonian Institution has published a

'Monograph of the Bats of North America,' by Mr. H. Allen, which must be regarded as a most valuable contribution to our knowledge of those animals, and has been worked up with great care by the author. Professor Peters has also read many important papers on different genera of Bats before the Berlin Academy of Sciences, which have appeared in the 'Monatsberichte' of that Society; he has also a monograph of the Chiroptera in preparation, which will be illustrated with numerous plates. Among the numerous papers on the Cetacea, in which the osteology of those animals is carefully studied for the purposes of generic and specific determination, those of Mr. Flower, published in the 'Proceedings' of the Zoological Society, may be regarded as taking the first place. The editors of the 'Annales des Sciences Naturelles' have also published a very important posthumous memoir by the late Professor Eschricht of Copenhagen, "On the Geographical Distribution of the Northern Whales." Dr. Gray, of the British Museum, has lately given us a new 'Catalogue of Cetacea,' a work displaying a great amount of research, and bringing together the results arrived at by former authors in a manner which cannot but render it exceedingly useful.

In recording the proceedings of Ornithologists, the first place is due to our countryman Mr. John Gould, whose magnificent works, on the Birds of Asia and of Britain, have each advanced by several parts in the last two years. The former, as usual, contains life-like representations of the many splendid and elegant feathered inhabitants of the Asiatic continent; the latter is distinguished from all previous illustrated works on British birds by the insertion upon the plates of representations of the young or nestling forms of many of the species, which cannot but be of the greatest advantage to future investigators of this department of the natural history of our island. Mr. Gould has also published a new edition of the text of his great work on the Birds of Australia, in the form of two octavo volumes, which will prove more convenient for common reference than the bulky folios in which the work originally appeared. Dr. Jerdon's 'Birds of India,' of which the third and concluding volume made its appearance in 1864, is likewise an exceedingly valuable text-book of the ornithology of that magnificent region, and is especially important on account of the great number of accurate personal observations on the habits of the birds which it contains. 'The Ibis,' which has commenced a new series, under the able editorship of Professor Alfred Newton, and the 'Proceedings of the Zoological

Society' contain an immense number of Ornithological papers of great value, to which, however, space will not allow us to allude; but we cannot pass in absolute silence the valuable memoirs, "On the Osteology of the Gallinaceous Birds and Tinamous," by Mr. W. K. Parker, and on "the Skeleton of the Great Auk or Garfowl," by Professor Owen, published in the Transactions of the last-mentioned Society. Our own Transactions have also contained an elaborate paper by Mr. A. R. Wallace, "On the Parrots of the Malayan Region," with a discussion of the general geograghical distribution of the Psittacidæ in accordance with the spirit of the Darwinian hypothesis.

The ornithologists of other countries have been no less active than our own; but we can only notice two or three of the most important of their productions. In the United States, the Smithsonian Institution has commenced the publication of a Review, by Dr. S. F. Baird, of the American Birds in its Museum, with critical remarks on many of the species: this will form a valuable aid to the student of the geographical distribution of American birds. Another important North American work is the 'Monograph of the Tetraoninæ,' by Mr. D. G. Elliott of New York, in which all the species of that subfamily of birds, so abundantly represented in the northern part of the American continent, are not only described, but well figured of the size of life. The natural history of the species is also very well given, and the young states of several of them are figured. Figures of the newly hatched young of many species of other groups are also published by M. Marchand, in Guérin's 'Revue et Magasin de Zoologie.' Professor Schlegel has continued his admirable 'Revue critique et méthodique du Muséum des Pays-Bas,' containing catalogues of the species of various families of birds contained in the fine Museum of Leyden, with valuable remarks upon many of them; and Dr. Pelzeln, of Vienna, has brought out the ornithological section of the 'Zoology of the Voyage of the Novara.'

Among the publications on Reptilia, we have again to give the first place to a work produced in this country—namely, Dr. Günther's 'Reptiles of British India,' published by the Ray Society. In this splendid work, the author has described the whole of the Reptilian inhabitants of continental India, the number of which, including both true Reptilia and Batrachia, is no less than 526. Besides the descriptions of groups and species, this volume contains notices of the habits of many of the animals, and some remarks on the geographical distribution of the Indian

Reptiles; whilst the value of the book is greatly increased by the beautiful plates with which it is illustrated, and of which it is sufficient to say that they are from the pencil of Mr. G. H. Ford. A work of almost equal value with the one to which we have just referred, but taking a zoological instead of a geographical limit for its subject-matter, is the elaborate memoir "On the Geographical distribution of the Chelonia," by Dr. Strauch, in the 'Mémoires de l'Académie Impériale des Sciences de St. Pétersbourg;' and a smaller work, a history of British Reptiles, by Mr. M. C. Cooke, although designed for popular purposes, is, from the spirit in which it has been executed, quite worthy of mention here.

M. Duméril has lately made some observations on the development of that curious Batrachian the Axolotl (*Siredon mexicanus*), which may, perhaps, eventually lead to a modification of our views as to the nature of that animal, and perhaps of the so-called Perennibranchiate Batrachia generally. From his communications to the French Academy of Sciences in November last, we learn that young animals produced from ova deposited by long-gilled Axolotls in the Menagerie at the Garden of Plants, after attaining an age of eight months, and a size about equal to that of their parents, suddenly underwent a change, losing the branchial tufts, and becoming considerably modified both in external appearance and in some points of internal structure. These observations open up the curious question, whether the Axolotls which have been living for two years in Paris, and from the ova of which these young animals have been reared, are really only larval (or tadpole) forms of some species the perfect condition of which is indicated by M. Duméril's specimens. We may also mention two elaborate memoirs on the anatomy of the Batrachia,—namely, the first number of 'Abhandlungen über die Perennibranchiaten und Derotremen,' by Dr. J. G. Fischer, devoted to the description of the anatomy of the hyoid and branchial arches and their muscles in various species of the Perennibranchiate group; and Professor Hyrtl's anatomy of *Cryptobranchus japonicus*.

The most important contributions to Ichthyological literature during the past two years are the continuation of Dr. Günther's Catalogue of Fishes in the British Museum, and the commencement of an "Histoire Naturelle des Poissons," by M. Auguste Duméril, in Roret's Suites à Buffon. Of the former, the fifth volume was published in 1864, and carries the revision of the true bony fishes to the commencement of the order Physostomi, the last extensive order of that subclass. This valuable work may now,

therefore, be regarded as approaching its completion. The first volume of M. Duméril's work is devoted to the typical Chondropterygii of Cuvier (the Elasmobranchi of modern authors), including the Sharks, Rays, and Chimæras. This volume contains an elaborate anatomical introduction and historical analysis of the authors who have treated of these fishes, and systematic descriptions of the groups and species.

The seventh volume of the Mémoires de l'Académie de St. Pétersbourg contains an elaborate memoir on the Mormyridæ, "Die Familie der Mormyren", by Dr. Marcusen, which is especially valuable from the careful comparative anatomical investigation which the author has bestowed upon these Fishes. The published portion of the Zoology of the voyage of the Austrian frigate Novara includes the descriptions of the new fishes collected, by Professor Kner; and Professor Bleeker has continued his magnificent folio 'Atlas Ichthyologique des Indes Orientales Néerlandaises.' The only ichthyological publication of local interest, to which we need call your attention, is Mr. Couch's History of the Fishes of the British Islands, the last portions of which have appeared within the last two years. Although essentially a popular work, it contains, as might have been expected from the reputation of the author, a great number of interesting observations on the habits of our British Fishes; and the plates, although not pretending to great scientific accuracy, are in general sufficiently good to afford considerable assistance to the student in determining the species.

On the Mollusca, the late Mr. Lovell Reeve had up to a recent period continued his 'Conchologia Iconica,' chiefly illustrating genera of bivalve mollusca. And of detached papers we may notice the memoir of Messrs. Alder and Hancock on a Collection of Nudibranchiate Mollusca made in India by Mr. Elliot, published in the Transactions of the Zoological Society, which makes us acquainted with many very singular forms of those creatures, and one by M. Schwartz von Mohrenstern on *Rissoa* ("Ueber die Familie der Rissoiden," part ii.), published in the Denkschriften der Akadémie der Wissenschaften in Wien for 1864.

If the contributions to the natural history of the Mollusca during the last two years have not been particularly numerous or important, this is by no means the case with the next great division of the animal kingdom, that of the Arthropoda, or Insecta in the Linnean sense. Here, especially in entomology properly so called, we have a mass of literature from which it would not be

difficult to pick out an immense number of works deserving of notice, either on account of their subject-matter and its bearings upon general questions of natural history, or their mode of treatment. In fact, with every desire to select only the most important publications, we shall have to refer to so many memoirs, that we can do little more in most cases than cite them by their titles.

Commencing with the Crustacea, we must first notice an important work by Dr. Fritz Müller of Desterro, entitled "Für Darwin," in which the author discusses at considerable length the evidence on the origin of species by evolution to be derived from the study of the Crustacea. In the course of this discussion a great number of valuable observations, especially on the development of the Crustacea, are brought together; and the whole of the evidence, in the author's opinion, tends strongly to the confirmation of the hypothesis of Mr. Darwin. Several observers have lately published papers on the metamorphoses of the Crustacea; and among these the first place must be given to those of Dr. Müller, in Wiegmann's Archiv, his memoirs on the metamorphoses of the Shrimps and Prawns being especially valuable. M. Hesse, of Brest, has also published an interesting memoir "On the *Pranizæ* and *Ancei*," describing the very singular mode of life followed by these creatures, whose very position in their class can hardly be regarded as clearly established; and Professor Lilljeborg's elaborate paper, on the curious parasitic Cirripedes forming the families Sacculinidæ and Peltogastridæ, has been republished in the Annales des Sciences Naturelles. The zoological portion of the Voyage of the Novara includes descriptions and figures of the new Crustacea, by Dr. Heller.

The classes Arachnida and Myriopoda, which are generally rather neglected by zoologists, have constituted the subject of some valuable works. The most important of these is Mr. Blackwall's History of the Spiders of Great Britain and Ireland, published by the Ray Society, which, completing the revision of the results of that gentleman's long-continued researches upon the British Spiders, already partially published in the Transactions of our Society and in the Annals and Magazine of Natural History, and combining them with those of Mr. Templeton's investigations upon the Irish species, furnishes a body of information upon the subject such as no other country can boast. Another valuable work upon the Araneida is M. Eugène Simon's 'Histoire Naturelle des Araignées,' which aims at giving a complete review of the genera of that order of Arachnida, and,

although disfigured by some faults both of omission and commission, will be found exceedingly useful to the student. The anatomy of the circulatory system of the Spiders has been elucidated by M. Claparède, by an investigation of this apparatus in the genus *Lycosa*, originally printed in the Mémoires de la Société de Physique et d'Histoire Naturelle de Genève, but reprinted in the Annales des Sciences Naturelles, and translated in the Annals and Magazine of Natural History.

On the Myriopoda we have to record the production of no such works as those just alluded to; but two important geographical memoirs have lately appeared,—one by M. Humbert, "On the Myriopoda of Ceylon," in the Mémoires de la Société de Physique et d'Histoire Naturelle de Genève; the other, "On the Myriopoda of North America," by Dr. H. C. Wood, in the Transactions of the American Philosophical Society. Both these works contain carefully elaborated descriptions of the genera and species; and the latter enters in some detail into the discussion of the mode of classification: both are illustrated with good figures. We may also indicate a paper by Professor Peters, entitled "A Revision of the Myriopoda of the family *Polydesmi* contained in the Royal Museum of Berlin," published in the Monatsbericht of the Berlin Academy of Sciences for 1864.

In treating of the entomological literature strictly so called of the past two years, we may commence by the consideration of one or two papers which have a general bearing independently of their mere entomological interest. One of these is the production of an American entomologist, Mr. B. J. Walsh, who calls attention to certain differences occurring in insects admitted to belong to the same species, in accordance with the nature of the food-plant, and endeavours to apply the results thus obtained in support of the theory of the origin of species by evolution from preexisting forms. To such different forms of the same species Mr. Walsh gives the name of *phytophagic varieties*; and he assumes that by their being excluded from intercourse with the forms feeding on other food-plants they may, in course of generations, give rise to *phytophagic races*, or even to what he calls *phytophagic species*, which would be either averse to, or quite incapable of, interbreeding. If this view can be maintained, it is evident that the hypothesis above alluded to will derive most important support from it. A memoir which will render great assistance to any European entomologist who will attempt to work out the problem enunciated by Mr. Walsh is Dr. Kaltenbach's "Deutschen Phytophagen,"

still unfinished, in the Transactions of the Natural-History Society of Rhenish Prussia. In this paper the author enumerates the German plants, in the alphabetical order of their generic names, and gives lists of the species of insects of all orders found feeding upon each. About three years ago Professor Wagner of Kasan announced his discovery of the larva, apparently, of a dipterous insect, which was capable of producing other similar larvæ through a certain number of generations—as he thought, by a change of the fatty mass of the body. A translation of Wagner's paper, published in the Zeitschrift für wissenschaftliche Zoologie, has appeared in the Natural-History Review. Since the first announcement of this astonishing discovery (which, it is needless to say, was received with much incredulity by zoologists), Professor Wagner and others have succeeded in rearing the perfect insect of this singular larva, which proves to belong to the family Cecidomyidæ, and has been described by Meinert under the name of *Miastor metraloas*, in a memoir published in Kröyer's Naturhistorisk Tidsskrift. Various papers on these viviparous larvæ have appeared in the German scientific journals; and a digest of the results of some of them will be found in the Annales des Sciences Naturelles for 1865. Perhaps the most important of the more recent papers is that by Professor Leuckart, in the Archiv für Naturgeschichte for last year, translated in the Annals of Natural History for March 1866, in which the author shows a strong analogy between the mode of formation of the peculiar reproductive bodies of the larva and that of the ordinary ova of insects.

The periodical publications specially devoted to entomological subjects in this country, on the continent of Europe, and in America continue in full activity; and even in New South Wales we find an Entomological Society publishing in its Transactions papers of considerable value. But before proceeding to the consideration of any of these or of the many other entomological papers to which we shall have to call your attention, it may be as well that we should first devote a few words to those contributions to the literature of entomology which have appeared in our own publications. These have been neither few nor unimportant. In the first rank of them we must place the elaborate "Monograph of the Nitidulariæ," by Mr. Andrew Murray, commenced in the concluding part of the twenty-fourth volume of our Transactions, a work of immense labour and research upon an obscure and difficult group of Beetles. The same part contained also a short paper, by Mr. Haliday, "On

a new genus of Insects belonging the Thysanura," characterized by that accuracy of investigation and philosophical tone which always lead us to regret that its distinguished author should have published so little. The first part of our twenty-fifth volume was entirely occupied by an entomological memoir on the Papilionidæ of the Malayan Region, by Mr. A. R. Wallace, with especial reference to the important questions of variation and geographical distribution. Our Journal also, during the past two years, has contained the completion of Mr. Walker's descriptions of Diptera collected by Mr. Wallace in his eastern travels. These, indeed, seem to have singularly attracted the attention of entomologists to the varied insect fauna of the rich tropical islands of the Eastern archipelago; and both in this country and on the continent great activity has been displayed in the production of more or less monographic treatises on the entomology of the Malayan region. In our Journal, Messrs. Smith and Walker have published the complete revision of the species of Hymenoptera, Diptera, Lepidoptera, and Homoptera brought home by Mr. Wallace; and the Entomological Society has devoted two separate volumes of its Transactions to the reception of treatises on the Longicorn and Phytophagous Beetles of the Malayan region, by Messrs. Pascoe and Baly. Abroad, M. Henri Deyrolle has published descriptions of the Malayan Buprestidæ of the Wallacean collections, in the Annales de la Société Entomologique de Belgique; and the Abbé de Marseul has described the Malayan Histeridæ in his new periodical, 'L'Abeille;' whilst the chief of the Dutch entomologists, M. Snellen van Vollenhoven, has commenced a series of monographs of the insect inhabitants of the Dutch East-Indian possessions, two of which, treating of the Scutellerides and Pierides, have already appeared.

Turning now to special entomological monographs without reference to geographical limits, the first place must be given to Professor Lacordaire's 'Genera des Coléoptères,' of which the seventh volume, completing the classification of the Curculionidæ and also including some allied groups, has recently appeared. The well-established reputation of this most valuable work renders any further reference to it superfluous. As a sort of pendant to it, however, we may notice a remarkable monograph, by M. Chapuis of Verviers, on the Platypides, a subfamily of the Bostrichidæ, with which Professor Lacordaire closes his volume. These are small wood-boring Beetles, of which about 16 species were previously described; M. Chapuis now describes no fewer

than 202, the majority of the new forms being either from the Malayan region or from Tropical America, collected by Mr. Wallace and his former companion Mr. Bates. M. James Thomson's 'Systema Cerambycidarum,' a generic synopsis of the Longicorn Beetles by the possessor of the most extensive collection of those insects in existence, also deserves mention here; likewise the commencement of the Catalogue of Phytophaga by the Rev. Hamlet Clark. Quitting the Coleoptera, we have to notice Dr. Gustav Mayr's memoir on the Formicidæ of the voyage of the Novara, which contains a synopsis of the rather numerous genera admitted by that author in the family of the Ants; and also the commencement of Messrs. C. & R. Felder's account of the Lepidoptera collected on the same voyage, the publication of which was preceded by that of the first part of a complete synonymic list of Lepidopterous Insects, by the same authors, in the Verhandlungen der zoologisch-botanischen Gesellschaft of Vienna.

Passing to those works which treat only of the insects of particular regions, we must give the first place to two volumes published by Mr. T. V. Wollaston, whose magnificent treatise on the Coleoptera of Madeira is well known. The first of these is a Catalogue of Canarian Coleoptera, published in 1864 by the Trustees of the British Museum; the second, under the title of "Coleoptera Atlantidum," gives a complete comparative list of the Coleopterous inhabitants of the Madeiran and Canarian groups of islands, which may possibly represent the highest summits of that great submerged continent, or Atlantis, which has been supposed to have been formerly united with the land which now forms Europe. The importance of Mr. Wollaston's investigations into the Coleopterous fauna of these islands is to be found in the fact of the identity or near relationship of most of the Beetles to European forms,—species apparently identical with the latter being found associated with others presenting certain local peculiarities not sufficient for specific distinction, and with others, again, in which the differences from their continental relations is so great as to induce Mr. Wollaston to describe them as distinct species, although, in many cases, evidently with considerable doubt. Hence it would appear, especially to a partisan of the Darwinian hypothesis, that we have to do in these islands with the remains of a great partially extinct fauna, coincident in many of its forms with that still existing in Europe, but also possessing some peculiar types, the

descendants of which still give a certain character to the Coleopterous fauna of the islands; but by the long-continued segregation of the species during the gradual submergence of the land, and the changed conditions to which the European species would thus be exposed, many of them have become more or less altered, producing either marked varieties, or apparently distinct specific forms. To this view, however, Mr. Wollaston does not give in his adhesion; and his arguments have considerable force; still we cannot but think that in these islands we have a natural experiment, on a large scale, for testing the validity of the hypothesis of the evolution of species.

Our space warns us that we must dismiss the remainder of the Entomological works to which we have to advert with almost a bare mention. The sixth and seventh volumes of the admirable 'Skandinaviens Coleoptera' of M. C. G. Thomson of Lund appeared in 1864 and 1865, and include descriptions of the Scandinavian *Serricornes*, *Heteromera*, and *Rhynchophori*. Several families of European Beetles have been treated more or less monographically by the Abbé de Marseul and other French entomologists, in 'L'Abeille,' the periodical already mentioned as having been established by him. Dr. Stål has completed his monograph of the American Chrysomelidæ, in the Nova Acta of the Academy of Upsal. Another Swedish entomologist, M. Holmgren, has published the first part of an 'Ichneumonologia Suecica,' which promises to furnish an admirable monograph of the Scandinavian Ichneumonidæ; and Dr. Taschenberg has given, under the title of "Die Hymenopteren Deutschlands," a synopsis of the European genera of Hymenopterous Insects, which will prove most serviceable to entomologists. In America, Mr. E. T. Cresson has published a descriptive synopsis of the Hymenoptera of Cuba, in the Proceedings of the Entomological Society of Philadelphia for 1865; and the same periodical for 1864 contains an important memoir by Mr. B. D. Walsh on the Cynipidæ, with especial reference to the occurrence of dimorphism and parthenogenesis in that family.

An important work for the student of European Lepidoptera is Dr. Werneburg's 'Beiträge zur Schmetterlingskunde,' which contains a synonymic analysis of all the descriptive works on that order down to the close of the last century. Mr. Stainton's Natural History of the Tineina has been continued, the eighth and ninth volumes having appeared in 1864 and 1865; and from Sydney we have three parts of a fine folio work on the Australian

Lepidoptera, by Mr. A. W. Scott, illustrated with good figures drawn by that gentleman's daughters.

Upon the lower and less studied orders of insects, the works of sufficient importance to require mention here are not numerous. Dr. Schiner's Diptera of the Austrian Fauna, published in 1863 and 1864, is a valuable handbook for the student of the European species of that order; and the same author has published two memoirs on the venation of the wing in the Diptera, and on the classification of those insects, in the Verhandlungen der zoologisch-botanischen Gesellschaft in Wien for 1864, and also a systematic catalogue of the Diptera of Europe. Dr. Loew of Meseritz has continued his monographs of the North American Diptera, in the Smithsonian Contributions, the monograph of the Dolichopodidæ having appeared in 1864. The obscure and difficult group of the Trichoptera or Phyganidæ has formed for some years the chief object of Mr. McLachlan's studies; and last year the results of his investigations were published by the Entomological Society. This appears to be an admirable memoir, carefully elaborated, and is profusely illustrated with figures of structural details, drawn by the author himself. The 'British Hemiptera' of Messrs. Douglas and Scott, published by the Ray Society, also comes opportunely to fill up a gap in our entomological literature; but few other works of any consequence have appeared on this order, if we except the 'Hemiptera Africana' of Dr. Stål, of which the first part, including the descriptions of the African Scutata, appeared in 1864.

With regard to the lower forms of animal life, we have only to mention a very few memoirs. On the Annellida, M. de Quatrefages has published, in the Comptes Rendus of the Academy of Sciences at Paris, and in the Annales des Sciences Naturelles, the tabular synopsis of the classification which he intends to adopt in his great work on these animals, to be published in the Suites à Buffon. In 1864 Professor Claparède brought out a valuable memoir on this class of animals in the Mémoires de la Société de Physique et d'Histoire Naturelle de Genève, under the title of "Glanures zootomiques parmi les Annélides de Port-Vendres;" and Professor Ehlers published the first portion of a work entitled "Die Borstenwürmer nach systematischen und anatomischen Untersuchungen dargestellt." Both these works are of great value, as is also a conjoint memoir by MM. Van Beneden and Hesse, which has appeared in the Mémoires de l'Académie Royale de Belgique under the title of "Recherches sur les Bdellodes et les Trématodes marins."

The remarkable researches by which some considerable insight has already been gained into the life-history of those mysterious creatures, the parasitic worms, are still being carried on by numerous observers with the happiest results; and although there is still much that is problematical in the history of some of the commonest forms, investigators are now pretty well aware of the direction in which their researches should be pushed. Professor Leuckart, to whom we are indebted for much of the knowledge which we already possess on this obscure department of zoology, has lately published an important work on the parasites of Man, and Dr. Cobbold a general Introduction to the Study of Helminthology, both of which contain a great amount of valuable zoological information. Professor Leuckart has also published some "Helminthologische Mittheilungen," devoted almost entirely to the description of the various modes of development prevailing among the Nematode worms, and containing many highly interesting original observations.

Some valuable observations by Dr. Alexander Agassiz on the embryology of the Echinodermata are given in the Memoirs of the American Academy; and Professor Baur publishes his three memoirs on the natural history of *Synapta digitata*, in the first two of which the anatomy and development of that singular creature are described in considerable detail, while the third is devoted to the investigation of the still more singular molluscan parasite which was discovered in it by the late Johannes Müller.

In connexion with the Cœlenterata, we shall call your attention only to the first part of the 'Beiträge zur Naturgeschichte der Hydromedusen,' lately published by Dr. Häckel, which contains an account of a very singular mode of reproduction in some of the Geryonidæ. And of the literature treating of the lowest of all forms of animal existence, we need only mention the first volume of Dr. Bowerbank's 'Monograph of the British Spongiadæ,' lately published by the Ray Society, which contains an account of the anatomical structure, physiology, and classification of Sponges in general, with a discussion of the characters by which the species may be distinguished.

In systematic phænogamous Botany I have not much to report upon. But little progress has been made in the general works in course of preparation, and the monographs published have been but of little extent; yet something has been done. Dr. Hooker and myself have to apologize for the tardy issue of the second

part of our Genera Plantarum; but the labour it entails is long and tedious, and we both of us are much impeded by other works which we cannot suspend, as well as by other occupations which unavoidably encroach upon our time. We confidently hope, however, to send to press the third part, completing the volume, soon after the summer recess.

Of De Candolle's Prodromus, since the detailed report I had occasion to make of it in the Natural-History Review for October 1864, only one part has appeared, containing Cupuliferæ and some of the small allied orders by De Candolle himself, with 327 species, whilst other small orders, by Casimir de Candolle, comprise 87 species. Both had previously published detached papers on subjects suggested in the course of working them up; and De Candolle has since inserted in the Actes de la Société Helvétique a paper on the venation of the leaves of *Fagus*, comprising, amongst other observations, one of those cautions to palæontologists in their determination of genera from the fragment of a leaf which are now arising from so many quarters. The genus *Euphorbia*, by Boissier, which I had mentioned as forming one part of the Prodromus, has now been illustrated by the author in a handsome folio volume containing 193 plates of the most interesting species. The printing of the remainder of Euphorbiaceæ, by J. Mueller of Argau, is, I am happy to learn, far advanced, and we may at length hope to see that vast, important, and difficult order rescued from the chaos into which it has been thrown by independent publications in all parts of the world. That Piperitæ, by Casimir de Candolle, are approaching completion, is shown by the forestallment of new species inserted in the last part of Seemann's Journal of Botany, and by a memoir on their anatomical structure, for the Actes de la Société Physique de Genève, just received from the author.

The last series of Walpers's supplementary compilation has been brought to a close by Carl Mueller, including all works he had access to up to the year 1855. He announces a new series for the ten years from 1856 to 1865, on a reduced scale, so as to give a better chance of an early completion. On the other hand, I regret to observe allusions to the state of the author's health preventing any positive engagement as to the periods of issue. Such a work is now so essential to the systematic botanist, as giving a clue to where he is to search for published species, that it is to be sincerely hoped the publishers will make such arrangements as to ensure its continuation.

Of monographs of detached groups we have (besides small con-

tributions far too numerous to mention even by name), from Russia, Bunge's revision of Anabaseæ, and monographs of *Cousinia* and *Echinops*, all well illustrated, in the Memoirs of the Petersburg Academy, and Regel's monograph of *Betula* and *Alnus*, in the Moscow Bulletin: from Germany, the conclusion of Hanstein's Gesneraceæ, and Klatt's Irideæ, in the Linnæa; a continuation of Schultz Bipontinus's Compositæ, in the Pollichia; and various Orchidaceous papers of Dr. Reichenbach, fils, dispersed through a variety of periodicals: from France, the commencement (containing the general matter) of a monograph, by E. Bureau, of Bignoniaceæ, an order now requiring, perhaps more than any other, a judicious rearrangement of genera (the work is in quarto, with illustrations well executed, as are now all botanical plates published in Paris); and by Decaisne, in the Annales des Sciences Naturelles, a revision of the curious little order or tribe of Pedalineæ. Two young men, Count Leonce de Lambertye, and a son of Professor Milne-Edwards, have published memoirs on Solanaceæ—the former from a horticultural, the latter from a popular and pharmaceutical point of view; and Eugène Fournier has communicated to the Société Botanique de France, some papers on the very difficult question of the classification of Cruciferæ, in which order, it must be confessed, natural tribes with any approach to definitiveness of character have not yet been proposed, and perhaps do not exist. Our own Journal contains a careful monograph of *Restio*, by Maxwell Masters, which we trust the author will soon continue through the rest of the order; and in the last part of our Transactions is a monograph, by Miers, of the little group of Conanthereæ. The same experienced botanist has, in a series of papers on Menispermaceæ, in the Annals of Natural History, severely criticised our own as well as Eichler's views of the genera and species of that order; and Seemann, in his own Journal of Botany, has published a rearrangement of a portion of Araliaceæ.

Next to general Genera and Species of Plants, and monographs of large groups, the most useful works to the systematic botanist are complete Floras of extensive regions. With regard to central and northern Europe, the vegetation has long been well studied. France, Switzerland, Germany, Belgium, Denmark, and Sweden, as well as our own country, possess standard Floras, alluded to in my address of 1862, all good, although varying in form, extent, and plan, requiring only new editions to embody corrections and additions in matters of detail, and in many instances improvement

in form, especially as to the diagnoses destined to facilitate the finding out the names of plants.

The observations of detail made by local European botanists upon the vegetation of their own several districts are of great value; they form the principal data for establishing the limits of species, races, or varieties, for determining those facts of geographical distribution upon the correctness of which must depend all speculations as to their causes, for leading us to a history of the life of a species as well as of the individual. Even the mania for characterizing every variation of form as a species has no doubt brought to light many curious facts illustrating the frequent hereditary permanency of minutely aberrant forms once produced, and corrected many of our previous ideas of the absoluteness of any test by which we can determine what is or what is not a species; and within the last few years these local observations have been as numerous and important as at any previous period; the Journals and Transactions of local Societies, of which I last year gave a sketch, are full of them. But they are mixed up with so much of repetition, so many long details that have been given over and over again, so much of patient observation and lengthened explanation to prove results of no use whatever to the botanist, general or special, that these papers are for the most part practically ignored. This is nowhere more fearfully exemplified than in Jordan's recently published "Diagnoses d'espèces nouvelles ou méconnues," the adoption of which would surely produce anything but a "flore réformée" of France and adjacent districts. Supposing, even, he were to succeed in proving that *Draba verna* is divisible into nearly a hundred distinguishable varieties or races, we may well ask in what does that advance science? for what purpose, systematic, physiological, phytogeographical, or practical, can we ever want to treat of *Draba verna* but as a single aggregate? We cannot but hope, therefore, that those acute observers who devote themselves to the study of critical plants will carefully go through all these innovations, pick out the sterling coin from the chaff in which it is buried, and consign the results to the new French and German Floras, or new editions, several of which must shortly be required, retaining for the benefit of the general botanist the species in the Linnæan sense (now often called superspecies), attach to them any new characters discovered, eliminate all descriptions (beyond a simple mention) of such evanescent hybrids as occur often only in a single individual, and reduce all subspecies and minor varieties to their proper level.

In point of form, there has been a considerable change, consequent upon the gradual but final abandonment of the Linnæan system. That system was originally accompanied by one of Linnæus's admirable methodical contrivances the separation of the diagnosis and the description, which have in the course of time been so signally confounded and perverted. His plan was to contrast the most important or striking characters in short diagnoses (never to exceed twelve words) with a view to giving a ready clue to the name of a plant, and to give a detailed description to enable the student to confirm the identity of his plant, and to teach him what is known concerning it. Lamarck and De Candolle's plan was in principle the same; but the diagnosis is given in a tabular form. Until lately, in all general works as well as in local Floras, the diagnosis has been nominally retained, but in a form which deprives it of all its advantages. It is no longer a Linnæan diagnosis, but a description in an ablative form, or a description of certain classes of characters only, the remainder being reserved for what is specially called the description. Many of the more recent Floras have reunited the whole into one description, replacing the diagnosis by italicizing a few contrasted words, as was very well done by Koch in his Synopsis of the German Flora. His example was followed by Grenier and Godron in their Flore Française, and by Babington in his British Manual, but with an arrangement of the descriptions according to an *à priori* estimate of the importance of characters, which is by no means of practical convenience. Of late years also the tabular dichotomous or nearly dichotomous diagnoses, or analytical keys, are getting more and more into vogue, and when well done from actual comparison of specimens, and not extracted only from descriptions, are, I believe, the most practically useful. But nothing is more difficult than to contrast specific characters in a large genus so as not to lead the student astray; and the careless manner in which many recent analytical keys have been drawn up has tended very much to throw discredit on the system. There is also some difference in the form adopted for these keys. The tabular form, indenting the subdivisions, as used occasionally by Koch and other Germans, is, I believe, the best where the species are not numerous or can be distributed into well-marked sections. The bracketed analytical keys of De Candolle and most French botanists are very convenient where the species are numerous or complicated in their relations, requiring cross references. The least convenient of all is the running the divi-

sions together in continuous lines, as in Miquel's Flora Indo-Batava.

The recently published Flore Française of Gillet and Magne is, for species, almost exclusively confined to bracketed analytical keys, into which more or less of descriptive matter is introduced. This, accompanied by excellent typographical execution, seems at first sight to offer great clearness and exactness; but a closer examination creates some disappointment. The student does not always want merely to be led to the name of his plant, but quite as frequently to verify the name he has obtained by that or other means; and for this purpose these broken descriptions are very inconvenient. And in point of execution, the endeavours to avoid copying from De Candolle have not always been happy. Taking the first few brackets of the general table, always of great importance to the beginner, De Candolle had already in the second bracket detached the large and easily defined groups of compound flowers. This in Gillet and Magne's table is deferred to the sixth bracket,—being preceded in the third bracket by the separation of diœcious, from monœcious polygamous and hermaphrodite flowers —a very puzzling one to the beginner, unless limited in the first instance, as is done by De Candolle, to the separation of unisexual from hermaphrodite flowers; in the fourth bracket, by the distinction of tubular or verticillate perianths from those reduced to one or two scales, the student having here to *include* in tubular perianths those numerous Cichoraceæ which he has to *exclude* from them at p. 194; and in the fifth bracket by the separation of Papilionaceæ, a much less numerous and more complicated group than that of compound flowers. The great rule to be kept in view in these dichotomous analytical keys is, first, that the divisions should be as clearly defined as possible; secondly, that they should divide the species as equally in numbers as possible.

The tabular diagnoses in Leo Grindon's 'British and Garden Botany,' are evidently done with great care and well adapted for popular use; but the collateral subdivisions are sometimes much too numerous. Class III. (p. 69), for instance, comprises seventeen, which are far from being well contrasted with each other; and the utility of the book is in some measure marred by the disturbance of the scientific arrangements, and a general appearance of disorder in the details.

In illustrated Floras, progress has been made both in Germany and in our country. The new edition of our 'English Botany,' in the full luxury of typography and illustration, is a great proof

of the interest taken in the study of plants by our wealthy classes. The work comes too near home for me to venture upon any critical remarks as to its merits; but I may be allowed to express a hope that a greater number of the old dissections upon the plates may be replaced, as some have been, by magnified details more in accordance with the present state of science. In Germany, Reichenbach's 'Icones Floræ Germanicæ et Helveticæ' is being steadily proceeded with. It is now in its twenty-first volume, or thirty-first if the previous ten of 'Plantæ Criticæ' be included. After this, four more will be required to complete the work, which will then contain, for a comparatively moderate price, a more perfect illustration of the flora of the whole of central Europe than has yet been carried out for any extensive region. The dissections in the latter volumes, by the younger Reichenbach, are particularly good. It may be that the existence of this work is one cause for which France is not even commencing a separate illustrated Flora of her own.

For the southern States of Europe, I had occasion, in the Natural-History Review for October 1864, to report on the state of the Floras of the three great southern Peninsulas; since when the only addition of any importance has been the appearance of the first part of the second volume of Lange and Willkomm's 'Prodromus Floræ Hispanicæ,' the importance of which I had in the above-mentioned article pointed out. It is with sincere regret that I see, by a notice in the Botanische Zeitung of the present year, p. 116, that the sale of the work has been so far from compensating the outlay, that, unless 50 more subscribers be immediately obtained, the publishers will be compelled to give it up, an appeal to which, it is to be hoped, all zealous students of European botany will cheerfully respond.

The Russians continue active in the investigation of the natural history of their vast territory. In a long list of botanical works and papers recently published by them, which I owe to the kindness of Dr. Regel, there are many, chiefly from the Transactions of the Petersburg Academy, and from the Moscow Bulletin, supplying data for future editions of Ledebour's Flora. Dr. Regel himself has described the plants of Semeinow and others, and leads us to hope that the general Flora of Eastern Siberia, which he commenced several years since, will now soon be continued. A Flora of Moscow, just published by N. Kaufmann, in the Russian language, is marked as good, but has not, as far as I am aware, yet reached this country. Several elementary and

physiological works, also in the language of the country, are reported to me as well calculated to familiarize the Russians with our interesting science.

The Japanese flora, to the peculiar interest of which I called attention in my address of 1862, has been the subject of some further investigations. Very rich sets of excellent specimens have been received from thence and from Formosa, collected by Mr. Oldham, whose recent loss is so much to be deplored; a portion of the former has been published by Oliver in our own Journal. Miquel, under the title of "Prolusio Floræ Japonicæ," has commenced a digest of the Japanese collections of Thunberg, Siebold, Buerger, Pierot, and Textor, of which we have received three parts in folio, although without plates: when these are gone through, he proposes, in a second series, to go through the miscellaneous sets of Japanese plants in the Dutch herbaria. This ought to give us a tolerably complete view of the Japanese flora; but we cannot but wish that the whole had been consolidated in one enumeration, that some order had been followed in the sequence of the families, and that some form had been adopted more convenient than the folio, which the absence of illustrations renders quite unnecessary.

In East India we have many active botanists; and partial papers on Indian plants, by Aitchison, Anderson, Beddome, Dalzell, Edgeworth, Kurz, Thomson, and others, continue to be inserted, chiefly in our own Journal and Transactions, but also in similar publications in India itself; and Thwaites's important Enumeration of Ceylon Plants, which I mentioned in 1862, is now complete. The progress, however, of the general Flora of East India has, I regret to say, been much retarded by the state of Dr. Thomson's health last winter; but I trust he will now be able again to take it up actively. The Dutch botanists, with Miquel now at their head, continue to illustrate the rich and, in many respects, little-known flora of their own East-Indian possessions and neighbouring independent islands, chiefly in the periodicals and Transactions enumerated in my last year's Address. We have not, however, since then received any continuation of the Annales Musei Botanici Lugduno-Batavi.

For Mediterranean Asia and the Egypto-Arabic region we have had detached papers in our Journal, especially by Lowne, on the flora of the rich oasis at the southern end of the Dead Sea, and by Redhead, on that of the desert of Sinai. Kotschy has published several papers in the Austrian Journals and Transactions; and I

understand that the first volume of Boissier's general Flora of the Levant is ready for the press.

Amongst the regions of which the flora has hitherto been comparatively little known, there are certainly none offering more interest than that of tropical Africa, not only from the number of new forms it discloses to us, but from the extraordinary number and diversity of generic types with a very small specific average to each, and from the curious connexions it exhibits on the one hand with the flora of the Eastern archipelago and Ceylon, and on the other with that of tropical America, together with many peculiar types of its own. In my Address of 1862, I mentioned several of the rich collections accumulated in our herbaria; since that, Dr. Welwitsch has brought over the whole of his own, with a view to their determination and publication; the remainder of Dr. Kirk's have also been received; and amongst several additions, the most interesting have been perhaps the plants collected by Speke and Grant in their celebrated journey through the region of the sources of the Nile. All these have been partially illustrated by detached papers, chiefly in our Transactions and Journal; and our Government has sanctioned the consolidation of the valuable information thus scattered, or yet to be gleaned from the specimens, in a general Flora of tropical Africa. This has been undertaken by Professor Oliver; and the first volume is, I believe, far advanced. In the mean time, German botanists have, to a certain degree, been working upon the same subject. Several papers on plants of the Upper Nile, by Kotschy, have appeared in the Transactions and Proceedings of the Academy of Sciences or of the Botanical Society of Vienna; and I have heard that a considerable portion of a more general work on the Ethiopian flora has been for some time in print. The herbarium of the Jardin des Plantes at Paris also contains many novelties from the Gaboon; and in the distribution from Kew of the duplicates from our own collectors, a first set has been sent to that establishment, some of which have been, perhaps rather too hastily, published by the writers in the 'Adansonia.'

The flora of Southern Africa, so remarkably contrasted with that of the tropical regions in the enormous specific diversity it exhibits, as well as in the peculiarly limited geographical range of individual species, would, we had every reason to hope, have been speedily laid before us in a complete shape, in the admirable 'Flora Capensis' of Harvey and Sonder. Dr. Harvey himself

had completed the Compositæ in the third volume, published last year, and was actively proceeding with the fourth when he was seized with the illness which has terminated fatally within the last few days and added one more to the heavy list of eminent botanists and excellent men whose loss during the twelvemonth we have to deplore. His last instructions before his decease related to the means of securing the completion of his Flora and the publication of the new edition he had prepared of his 'Genera of the Cape Flora.'

In Australia, Ferdinand Mueller continues to display the same extraordinary zeal and activity. The fifth volume of his 'Fragmenta Phytographiæ Australiæ' is nearly complete, in which, with his usual accuracy of detail, he continues to describe the novelties he receives, establish and reduce genera, and consolidate species with increasing boldness. He has also published a general sketch of the vegetation of the Chatham Islands, and a volume of "Lithograms" or plates, intended for the continuation of his elaborate Flora of Victoria, which I sincerely hope he will now resume. To Dr. Hooker we owe the first part (completing Phenogamous plants) of an excellent 'Manual of the New Zealand Flora,' reducing to the convenient octavo form the elaborate and more expensive work he had previously published, and embodying the large mass of new discoveries since received. The second part, comprising Cryptogamic plants, is in the press. The very rich collections received at Paris from their new possessions in New Caledonia, comprising much that is new and of high interest, are being gradually made known, in a series of papers by Brongniart and Gris, in the Annales des Sciences Naturelles and the Bulletin de la Société Botanique de France. And Seemann has published three parts of his 'Flora Vitiensis' or Flora of the Fiji Islands, in quarto, with excellent illustrations by Fitch, bringing the work down to Umbelliferæ.

In North America, none of the great works, neither the Botany of the American Exploring Expedition nor the general Flora of North America, have yet been resumed; but a few botanists are actively at work, and amongst them none more so than Asa Gray, whose well-known accuracy of detail, connected with great correctness of general views, a thorough knowledge of general botany in all its branches, and a philosophical mind, has given him so high a rank among the votaries of the science, and imparts so much value even to detached papers proceeding from his pen. Among those which have recently appeared, chiefly in the Pro-

ceedings of the American Academy, are several illustrative of collections of plants made in various little-known parts of the North American continent, monographs of American genera, especially of *Astragalus*, and important notes on Rubiaceæ, Compositæ, and other orders not yet published in the Botany of the American Exploring Expedition.

For the West Indies, Grisebach has completed his Flora of the British possessions, and has since been specially occupied with Cuban plants from American collectors, and has supplemented the enumeration he had published in the Transactions of the American Academy of Sciences by papers in the Göttingen Transactions and Journals.

For South America, Martius's great work on Brazilian botany proceeds steadily. Since my last report the principal orders illustrated and described have been,—Scrophulariaceæ, by J. A. Schmidt; the several Polypetalous orders commencing the Candollean series, by Eichler, who has at the same time supplemented his account of Menispermaceæ by a separate paper in the Munich Transactions; Coniferæ and allied orders, also by Eichler; Sapotaceæ, by Miquel; Eriocauleæ, by Körnicke; Gnetaceæ, by Tulasne; Ericaceæ, by Meisner; Gesneraceæ, by Hanstein; Salsolaceæ, by Fenzl; and Gentianaceæ, by Progel.

Planchon and Triana's Flora of New Granada has been commenced, in detached portions, in the Annales des Sciences Naturelles. A first portion, comprising the Thalamifloræ, has been reissued in a separate volume. The Ferns (by Mettenius), Selaginellas (by A. Braun), Mosses (by Hampe), and Hepaticæ (by Gottsche) have since appeared; and I understand that M. Triana, who is now in this country, has made arrangements with his government by which he will be enabled actively to prosecute his great work at Kew.

In the above review I have not included the voluminous contributions to Systematic Botany by Baillon and his friends in the 'Adansonia;' for I was desirous of saying a few words generally upon that work, which is rather a *recueil* than a periodical. There is no doubt that the papers it contains display a great amount of careful observation, patient investigation, and ingenious views of affinities which cannot be neglected by systematic botanists, and that upon Euphorbiaceæ especially M. Baillon has bestowed great pains; but it must also be admitted that the whole is marred, not only by the irregular mode of publication, but by a frequent neglect of consulting what has

been previously published, a thorough conviction of the paramount importance of organogenesis, and very peculiar views of what is meant by method and how it should be carried out. What Baillon had begun in Euphorbiaceæ, and what the younger Agardh had attempted in a general system, appears to have been followed out, under the same school, for the benefit of the pupils at the Jardin de l'École de Médecine at Paris. In the table of the Natural Orders as there taught, and given in the 'Adansonia,' we learn for instance that Polygoneæ are Chenopodeæ with solitary erect orthotropous ovules, that Loranthaceæ are Polygoneæ with the stamens opposite the petals, and that Juglandeæ are apetalous Loranthaceæ with diclinous flowers. It would logically follow that a Walnut is a Goosefoot. It appears to me that it would give just as clear an idea of affinities if we were to say that an Oak is a Moss with a woody stem and amentaceous flowers. As to the want of research, we may quote the genus *Eremopyxis* of Baillon, which had already been twice detached from *Bæckea* by others — or Marchand's long paper on the structure of the stem in Phanerogams, where we have only to contrast his single page of bibliography with the thirty-seven pages of Oliver's paper in the Natural-History Review for July 1862, required for the enumeration of the works and papers published on the same subject.

In Cryptogamic Botany, I need not to mention the numerous publications on Ferns which the increasing taste for the cultivation of that beautiful tribe has extracted from scientific, semi-scientific, or purely popular writers. But whilst we have reason to congratulate ourselves that the late Sir William Hooker had completed his great 'Species Filicum,' we cannot but regret that the condensed Synopsis, in which he embodied all recent discoveries, and with which he had made great progress, should have been cut short by his lamented decease, without being sufficiently advanced to give us any hope of its completion by other hands.

In Mosses and Lichens, the recent contributions have been chiefly detached papers on those of local districts, or of special collections made by travellers, and inserted in a great variety of Journals and Transactions at home and abroad. On the general subject I have only to mention Schimper's supplements to the 'Bryologia Europæa,' and a supplement by Nylander to his 'Synopsis Lichenum.'

With regard to Fungi, I was struck with the simultaneous

and independent observations of De Bary at Leipzig, and Œrsted at Copenhagen, on the identity of *Æcidium Berberidis* and *Puccinia Graminis*, so unexpectedly illustrating the popular prejudice, as it has been called, of the effect of the Barberry in producing Rust in corn. Having never devoted myself much to the study of Mycology, I applied to my friend Mr. Currey for a few notes on these papers, and on any others recently published illustrating this singular class of beings, the tremendous effects of which on the development of animal and vegetable life, and consequently on the main interests of human existence, are becoming daily more evident. Responding to my wishes, Mr. Currey has given me a detailed summary too long for me to read on the present occasion, longer indeed than I should otherwise have thought of inserting; but it appears to me to be a sketch of the most important results of recent investigations so useful to the naturalist who has little time to devote to the special subject, that I have no hesitation in embodying it in this Address. I have only to add that De Bary's "Morphologie und Physiologie" of Fungi, Lichens, and Myxomycetæ, forming the first part of the second volume of Hofmeister's 'Handbuch der physiologischen Botanik,' which I shall presently refer to, has only reached us since the following notes were drawn up.

Cesati and De Notaris's treatise on the Ascigerous Sphæriacei* is an attempt to rearrange this vast group of Fungi, which is estimated to contain at least 2000 species. The authors give a short account of the successive views of the different botanists who have from time to time treated of this class of Fungi, and then propose a fresh systematic arrangement, in which they rely mainly upon the substance and texture of the perithecia, and the form and nature of the sporidia. They consider that in general the stroma affords no sufficient characteristics for precise classification—although it is of value in some cases, when its nature is well defined. They separate the entire family into two great divisions,—1st, the Hypocreacei, which includes the genera *Cordyceps*, *Claviceps*, *Torrulia*, *Hypocrea*, and *Nectria*; and 2ndly, the Sphæriacei, which they subdivide into 37 genera, 13 being proposed for the first time.

In reference to the same subject, Mr. Currey has published, in

* Schema di classificazione degli Sferiacei Italici aschigeri più o meno appartenenti al genere Sphæria nell' antico significato attribuitogli da Persoon. Per V. Cesati e G. de Notaris. Genova, 1863.

the 25th vol. of the Trans. Linn. Soc., some observations supplementary to his former papers on the *Sphæriæ* of the Hookerian Herbarium. His object has been to show which of the species, previously figured by him, were described from authentic specimens, and, with regard to the non-authentic ones, to state by whom the plants have been named. The result shows that the Herbarium contains a large number of authentic specimens, besides many which, without being absolutely authentic, are almost (if not quite) as valuable, from having been identified by Fries, and published by him in the 'Scleromycetes Sueciæ' or described in the 'Systema mycologicum.'

The main interest of De Bary's paper on the fructification of the Ascomycetes *, consists in the observations on *Erysiphe Cichoracearum*, DC., in which the author traces the origin of the perithecium from its earliest state up to the formation of the single ascus and spores. He notices two cells as being always present and visible from the earliest period, one of which he conjectures may be the female, and the other the antheridium or male organ. He says that the cell by the division of which the ascus and its coating are formed, only developes itself when it has been in contact with the antheridium; and he considers it very probable that impregnation is effected by such contact, and that the perithecium of *Erysiphe* (excepting the outer wall) is the product of such impregnation.

De Bary's paper on vegetable parasites † was undertaken with a view to contribute to the solution of the question as to the origin of parasitic fungi; and he concludes (as might be expected) that endophytes are not produced from the metamorphosed substance of diseased plants, but that they originate from germs which penetrate healthy plants and develope a mycelium. In the course of his investigations he notices the occurrence, in the genus *Cystopus*, of organs similar to those long since discovered by Tulasne in *Peronospora*, and which have been called oogonia. He observes that ramifications from the mycelium attach themselves to the oogonia, and conjectures that these ramifications perform the functions of antheridia or male organs; and he pro-

* Ueber die Fruchtentwickelung der Ascomyceten. Eine Pflanzen-physiologische Untersuchung. Von Dr. A. de Bary. Leipzig, 1863.

† "Recherches sur le développement de quelques champignons parasites. Mémoire pour servir de réponse à une question proposée par l'Académie des Sciences en 1861, et pour servir de Supplément aux travaux sur la question des générations dites spontanées. Par M. A. de Bary." Ann. d. Sc. sér. 4. t. xx.

ceeds to describe the production by the oospores (or impregnated contents of the oogonia) of active zoospores, similar to those produced by the ordinary spores of *Cystopus*. Dr. de Bary states that these zoospores, after remaining active for three or four hours, lose their cilia and power of motion, assume a cellulose covering, and germinate. He adds that the germ-filaments enter readily by the stomates and leaves of the nutrient plant, but that those filaments only become developed which *enter the stomates of cotyledons*. In *Peronospora* the development of the antheridia, oogonia, and oospores is said by De Bary to be the same as in *Cystopus*; and he gives particulars of the mode of germination of the conidia, and remarks on the growth of the parasite, which can only be studied in detail in the paper itself.

The most interesting part of the paper is that which contains the observations on *Uromyces appendiculatus*. The mode of germination of the spores of this plant, the growth of the promycelium, and the production of the so-called sporidia are well known from Tulasne's account *, published long since in the Annales des Sciences Naturelles. De Bary has followed the process in its subquent stages. According to his observations, the sporidia produce a mycelium, from which spring in succession—1st, spermogonia; 2ndly, peridia, producing chains of orange-coloured fruit (or, in other words, an *Æcidium*); and 3rdly, the original fruit of *Uromyces*, accompanied by the more simple fruit formerly called *Uredo*, and now called *Uredo*-stylospores. The germination of the *Æcidium*-stylospores (*i. e.* the fruit produced by the peridia), as well as that of the *Uredo*-stylospores, produces, according to De Bary, 1st, *Uredo*-stylospores, and, 2ndly, the original *Uromyces*-spores. These results, if correct, are very singular. We find the *Uromyces*-spores passing through the generations of promycelium, sporidia, and mycelium,—the latter producing successively the two different products, spermogonia and æcidia, and ultimately the original fruit of *Uromyces*, accompanied by the *Uredo*. The spermatia (or contents of the spermogonia) never germinate; but we find the fruit of the æcidia, and also of the *Uredo*, reproducing, first the *Uredo* itself, and subsequently the original fruit of *Uromyces*.

Other interesting points noticed by De Bary are, that not only has each species of parasite a certain special nutrient plant, but it is probable that in certain Uredineæ with multiple fruit

* "Second Mémoire sur les Urédinées et les Ustilaginées," Ann. d. Sc. sér. 4. vol. ii. p. 77.

and alternate generations each sort of reproductive organ buries its germ in a different nutrient plant; the vegetation of the parasite is the sole cause of disease; there is no pretence for supposing that a morbid predisposition of the nutrient plant causes or favours the attack of the parasite, but, on the contrary, the more healthy a plant is, the more the parasite flourishes, if external conditions are favourable to it; that the parasitic diseases are contagious; and that the observations tending to show predisposition to attack have been made on perennial plants, and are explained by the fact that the mycelium imbedded in these plants is itself perennial.

The observations of M. Oersted, of Copenhagen, translated in the last part of the Journal of the Horticultural Society, are directed to prove the identity of *Podisoma Sabinæ* (the tremelloid fungus which grows on the branches of *Juniperus Sabina*) with *Rœstelia cancellata* (which attacks the leaves of pear-trees). His experiments have satisfied him that the two fungi in question are alternate generations of the same species; and the author adds that, from other experiments made by him upon *Æcidium Berberidis*, he has arrived at the conclusion that *Æcidium Berberidis* bears the same relation to *Puccinia Graminis* that *Rœstelia* does to *Podisoma* *. These observations are the more interesting from the fact of their having been made by M. Oersted without any knowledge of De Bary's investigations, which had contemporaneously led the latter writer to precisely the same conclusion (as to *Æcidium Berberidis*) as that arrived at by M. Oersted.

De Bary's observations on the connexion between *Æcidium Berberidis* and *Puccinia Graminis* are to be found in the Monatsberichte of the Berlin Academy for January 1865. He has carried out a series of careful experiments, which have satisfied him that the sporidia of *Puccinia Graminis* germinate on the leaves of *Berberis*, and that the *Æcidium* of the *Berberis* is a stage in the cycle of development of *Puccinia*. Thus, whilst in most Uredineæ the entire development is carried out upon one and the same nutrient plant, the alternate generations in *Puccinia Graminis* require a change of host. This (Dr. de Bary observes) is a peculiarity to be especially remarked. It is a state of things well known in the animal kingdom in the Tæniæ

* In the Reports of the Academy of Vienna, vol. li. p. 76, Reichardt describes as an *Æcidium* a plant from New Zealand which (he considers) forms an intermediate link between *Æcidium* and *Rœstelia*.

and Trematoda, but *Puccinia Graminis* is the first of the parasitic fungi in which it has been certainly ascertained.

Another interesting part of De Bary's paper is the full account which he gives of the different opinions as to the supposed injurious effect of the proximity of *Berberis* to corn—a notion very prevalent amongst agriculturists, whose views (although somewhat laughed at hitherto by scientific men) receive confirmation from De Bary's observations.

In the second and third volumes of the 'Selecta Fungorum Carpologia,' by the brothers Tulasne, we have the completion of a work distinguished alike by the profoundness of its research and the beauty and accuracy of its illustrations. The different forms of fructification exhibited successively or contemporaneously by the same fungus had led to the formation of a host of spurious genera; and the present work contains a selection (from a number of observations) of cases in which the authors have traced the connexion between these different forms, and have succeeded in showing that many genera, such as *Hendersonia*, *Diplodia*, *Prosthenium*, &c. amongst the Coniomycetes, and *Helminthosporium*, *Macrosporium*, and others amongst the Hyphomycetes, are nothing more than imperfect or transitory stages in other genera of the great order of Sphæriacei. The observations are far too detailed and extensive to attempt to give any concise or cursory view of them; but it may be stated generally that the second volume treats of the three great groups of Xylariei, Valsei, and Sphæriei; whilst the third includes the Nectriei, besides the groups of the Phacidiei and Pezizei.

Besides the elimination of the groundless genera above referred to, it has been the object of the authors to define more accurately the numerous genera to which their observations relate; so that, in a classificatory as well as in a physiological point of view, the work is one of the utmost importance, and must be studied by all mycologists who would wish to obtain sound views upon the subjects to which it relates.

Some objections have been taken to the work being written in Latin, as less suitable than French for the present age; but this is hardly a reasonable complaint, although (as has been observed by an eminent German botanist) it is not obvious at first sight that "Horti Clodoaldenses" means St. Cloud, "Cavillæ Versaliorum" Chaville, &c. &c.

The nature of the organs called cystidia, which occur upon the gills of many of the Agaricini as well as upon *Boletus*, has been

a matter of discussion since the time of Micheli. Micheli, Bulliard, Klotzsch, and Corda all agreed in attributing sexual functions to them. Phœbus, in the 19th volume of the 'Nova Acta,' disputed this notion; and the question seems now to be set at rest by the observations of M. de Seynes in his recent work, 'Essai d'une Flore mycologique de la région de Montpellier et du Gard.' The conclusion at which M. de Seynes arrives is, that these cystidia are nothing more than organs remitted to vegetative functions by a sort of hypertrophy—that they are in fact basidia which, having become hypertrophied, have resumed the character of vegetative organs, as one sees abnormally a carpel become a leaf.

In a paper* published in the 'Botanische Zeitung' for August 26, 1864, M. Sollmann has attempted to show that in certain species of *Nectria* a process of impregnation takes place similar to that which has been noticed in *Fucus*, *Sphæroplea*, *Vaucheria*, and other kinds of Algæ, viz. by the incorporation of spermatia with the young spores. Much doubt has been thrown upon these observations by the subsequent remarks of Professor Janowitsch in the Botanische Zeitung for May 12, 1865†, who maintains not only that the so-called spermatia are not impregnative bodies and do not amalgamate with the spores, but that they in fact originate from the spores themselves, being the product of the germination of the latter. M. Sollmann's theory would no doubt require a considerable amount of confirmatory evidence before mycologists would be willing to accept it; but, on the other hand, it is almost equally difficult to admit M. Janowitsch's suggestion, that the occurrence within the ascus of the bodies called by Sollmann spermatia (as observed by Mr. Berkeley and by De Notaris) is to be explained by reference to the process of germination.

The cause of the disease known as "Spot" in Orchids, of which several different kinds have been noticed by cultivators, has been traced by Mr. Berkeley, in one instance, to the occurrence of a minute parasitic fungus belonging to the genus *Leptothyrium*. A description of the disease, with excellent illustrations, giving the general appearance of the diseased leaves and a magnified figure of the parasite, has been given by Mr. Berkeley in the 1st part of the new series of the Journal of the Horticultural Society.

* "Beiträge zur Anatomie und Physiologie der Sphæriaceen," von August Sollmann.

† "Ueber die Entwickelung der Fructifications-Organe von Nectria," von Alexis Janowitsch.

De Bary's 'Beiträge zur Morphologie und Physiologie der Pilze,' of which two parts have been published in a separate form (in the second of which he was assisted by M. Woronin), appeared first in the Transactions of the Senckenberg Natural-History Society. The first part contains observations on the genera *Protomyces*, *Physoderma*, *Exoascus*, *Phallus*, and *Syzygites*. The most interesting facts noticed in *Protomyces* are the hybernation of the sporangia, and the copulation of the spores. Although some few of the sporangia may germinate in the summer, by far the greater number pass the summer without change, and, remaining unchanged during the winter, do not commence growth until the spring. They have great capacity for resisting cold; for in the neighbourhood of Freiburg in the winter of 1860–61, when the temperature in January often fell below zero of Fahrenheit, with hardly any snow, the sporangia which had been exposed during the winter germinated freely in the spring. Soon after the ejection of the spores from the sporangia, they were seen to unite in pairs, in the manner long since observed to occur in the spores of *Tilletia*. *Exoascus* is the name given by Fuckel, in his 'Enumeratio Fungorum Nassoviæ,' to the fungus which causes the strange disease which occurs in different species of *Prunus*. The disease is common in some parts of Europe; it causes a monstrous enlargement of the unripe fruit; and the Germans have a variety of names for it (Taschen, Schoten, Norren, Hungerzwetschen). Dr. de Bary describes and figures the different stages of the fungus, and concludes that it is the primary cause of the disease in question. He is of opinion that those authors who attribute the disease to the effect of weather happen only to have observed its occurrence in unfavourable seasons, and have hastily concluded that the weather was the cause, whereas more extended observation would have shown them that it occurs in all seasons. With regard to the systematic position of *Exoascus*, De Bary thinks it a true Discomycete, and ingeniously suggests that it bears the same relation to *Helvella*, *Spathulea*, &c. as *Sphœria typhina* does to the larger species of *Cordyceps*. The genus *Exoascus* is perhaps unnecessary; for (as Hoffman has suggested) the plant described by De Bary does not seem to differ from *Ascomyces deformans* of Mont. & Drom.

The observations on the Phalloideæ do not call for any special remark; and those on *Syzygites* are shortly to the effect that the plant is a Hyphomycetous fungus with double fructification, the

one form being the spores produced by copulation (zygospores), the other the asexual fruit or spores proper. The latter are produced in large cells at the apex of the threads, as in the genus *Mucor*. The threads with the mucoriniform fruit have been described by Link as a distinct fungus, under the name of *Sporodinia grandis*.

The second part of the "Beiträge zur Morphologie und Physiologie der Pilze"*, produced conjointly by MM. de Bary and Woronin, contains observations upon *Ascobolus*, *Mucor*, and *Peronospora*. The general remarks upon the development of *Ascobolus pulcherrimus* are too detailed to be referred to at any length; but it is worthy of remark that M. Woronin has discovered, in the early stages of growth, the formation of a peculiar cellular body, and the attachment to it of other cells, thrown out from the neighbouring mycelium, quite analogous to what has been before observed by De Bary in the case of *Erysiphe*; and he states that he has seen the same process (which may possibly be a process of impregnation) occur in the early stages of *Peziza scutellata* and *Peziza granulata*. A very interesting fact, noticed for the first time by M. Woronin, is the occurrence on the mycelium of *Ascobolus pulcherrimus* of resting spores, which, after being thoroughly dried and passing the winter in a state of quiescence, germinate freely on the application of moisture in the spring.

The observations on *Mucor Mucedo* are directed to show that the common mould which goes by this name has three, if not four, different forms of fruit; and the authors have satisfied themselves that the mould called *Thamnidium* by Link (but which is better known under Corda's name of *Ascophora elegans*) and the mould described by Messrs. Berkeley and Broome as *Botrytis Jonesii* (which is made into a new genus by Fresenius, under the name of *Chætocladium*) are only varieties of the fruit of *Mucor Mucedo*. The authors have been unable to verify Bail's statements as to the identity of *Mucor Mucedo* with yeast, *Achlya*, *Saprolegnia*, and *Entomophthora* (or *Empusa*), although they confirm that writer's opinion as to *Entomophthora* being only a stage in the development of *Achlya prolifera*. In *Mucor stolonifer* MM. de Bary and Woronin have discovered the existence of a second form of fruit, viz. zygospores produced by the copulation of two cells in a manner precisely similar to what takes place in *Syzygites*. They seem premature in assuming the probability of the occurrence

* Abhandl. d. Senckenb. naturf. Gesellschaft, V. Bd. (printed separately).

of zygospores in all the species of Mucorini; but they are perhaps justified in transferring *Syzygites* to *Mucor*, under the name of *Mucor Syzygites*. Some useful remarks are appended as to the necessity of a large reduction of the genera of the Mucorini; and it is suggested that the arrangement of the species must remain in suspense, starting with six well-defined ones, viz. *Mucor Syzygites*, *M. Mucedo*, *M. Phycomyces*, *M. macrocarpus*, and *M. fusiger*.

The rest of the paper under consideration relates to a peculiar mode of development of the conidia of *Peronospora infestans* (the Potato-disease fungus), and to the germination of the oospores of *P. Valerianellæ*, which have been observed to produce germ filaments similar to the mycelium of the species, and not to yield zoospores.

To those mycologists who are particularly engaged in the study of the Discomycetes may be recommended a pamphlet published at Genoa in 1864, by M. de Notaris, under the title "Proposte di alcune rettificazioni al profilo dei Discomiceti." The author is of opinion that the genera of this large division, defined, as he says, by Fries in the 'Summa Vegetabilium Scandinaviæ' *con singolare perizia*, required to be reconsidered with reference to the light thrown upon the group by recent investigations.

A fourth number of Hoffmann's 'Icones Analyticæ Fungorum,' a work devoted to the development and minute anatomy of fungi, has just been published.

The effect of fungi in the production of cutaneous disease is a question upon which recent investigations afford very little satisfactory evidence. The hopelessly irreconcileable opinions of the best French and English authorities lead only to the conclusion that either one side or the other has a very imperfect notion of the causes of the diseases committed to their care. The fearful complaint (not belonging to the cutaneous class) known as the fungus-foot of India, has been the subject of careful investigation by Dr. H. J. Carter, Dr. H. V. Carter, and Mr. Berkeley; and the results of their inquiries will be found condensed in a short but very interesting paper, published in the 8th vol. of the Journal of the Linnean Society.

The use by the Russians of the well-known *Phallus impudicus* in medicine has been the subject of an interesting paper by Dr. Kaleniczenko, in the 25th vol. (p. 529) of the French periodical 'l'Union Médicale'*. The fungus is collected both in the young and mature condition. The gelatinous contents of the young

* "Observations pratiques sur l'action médicale du Champignon Phallus impudicus (Dziabka) dans certaines maladies de l'homme."

volva are extracted and made into a sort of ointment, which is called "earth-butter," or "earth-oil" (Zemlianoe maslo); and this is used for external application. The ripe fungus is dried in an oven, or in the sun, and then powdered, and the powder (which retains the offensive smell of the fresh fungus) is made into an infusion with water or alcohol. This mixture, which produces the most powerful effect upon the human body, is used as a remedy for gout and rheumatism, for periostitis, and for abdominal dropsy after chronic intermittent fever. The medical properties of this fungus having been hitherto quite unknown, the subject deserves the attention of the profession.

In Geographical Botany, since I mentioned the subject in my Address of 1863, there have been a few papers, chiefly upon local distribution as affected by climatological and other physical causes, of which the most interesting are those drawn up by observers of the vegetation of mountainous regions or of high latitudes. Amongst these I may mention several papers by Ruprecht and by Middendorff and others, in the Petersburg Transactions and in the Moscow Bulletin, including Ruprecht's researches into the origin of the *Tchernozem*, or black soil of the south of Russia; Baker's 'Flora of North Yorkshire,' and especially Heer's opening Address to the Meeting of 1864 of the Société Helvétique des Sciences Naturelles. The general subject is, I hope, likely to be again taken up by the distinguished author of the 'Géographie Botanique.' I understand that the stock of that work is nearly exhausted, and that M. de Candolle has in contemplation either a new edition or a remodelling of the work in a more compact form. There is indeed a great deal of minute detail which was very essential for establishing the general facts commented upon, but which, having thus been once recorded in a book very generally dispersed and deposited in accessible libraries, would not need repetition, and might be made to give place for a digest of the additional facts recorded. Greater extent would also naturally be now given to the development of the history of the migration of species, independently of climatological causes, towards which a considerable mass of data has been collected since the first edition. I would venture particularly to call the author's attention to that apparent general tendency of species to travel from east to west rather than from west to east, to which I alluded in 1863; to the inquiry whether there is any connexion between this tendency and the great accumulation and diversity of species of limited areas at the western and, especially, south-western extremities of great con-

tinents, such as South-west Europe, the Cape district, South-west Australia, Chile, and Mexico; to the investigation of the close connexion, in many respects, between the high northern and extreme southern floras, rendered still more striking by the number of species found of late years in the newly explored mountains of Victoria and Tasmania, either absolutely identical with or scarcely to be distinguished from European forms; to the comparative distribution of plants and of insects, whose existences are so closely dependent on each other—to the discussion, for instance, of how far the speculations of Wallace, founded on the distribution of Polynesian insects, are or are not confirmed by that of the vegetation of those islands.

Vegetable Physiology, in all its branches, has much occupied the attention of continental observers, both in France and Germany, and more especially in the latter country; and many are the observations, throwing new lights on the history of vegetable life and structures, recorded in the Transactions and Journals of both countries. It is, however, unnecessary, for the present at least, to devote our time to the searching them out from the enormous mass of writing in which they are buried; for a general digest, of excellent promise, has been commenced by several eminent German physiologists under the guidance of Hofmeister. Of this work, entitled "Handbuch der physiologischen Botanik," and intended to be complete in four octavo volumes, the fourth (by Julius Sachs) and the first half of the second (by De Bary) have reached us within the last few days; both are, however, dated some months back. As far as can be judged from a rapid glance, this work appears to give a remarkably clear and methodical exposition of subjects which are now become most complicated. In De Bary's half volume, Fungi are treated of, in four parts: — 1. Morphology, or structure; 2. Reproduction, asexual or sexual; 3. Development, including Pleomorphism and Metamorphism; and 4. Physiological Peculiarities, including their requirements for production and nutriment, the influence upon them of external physical causes, and the effects of their own action upon the substrata on which they live. A similar arrangement of the subject is then followed for Lichens; and a shorter chapter at the end is devoted to Myxomycetæ.

Julius Sachs's volume is entitled "Handbook of the Experimental Physiology of Plants; or, Researches into the most general Life-requirements of Plants, and the Functions of their Organs." Fertilization of plants is, however, excluded from this volume, as it is to form the subject of one of the previous ones not yet pub-

lished. The present author divides his subject into thirteen treatises, of which the first five are devoted to the effects of light, heat, electricity, gravity, and chemical elements respectively upon plants. We then come to the absorption of nutritive elements, the circulation of fluids, followed by that of gases, through plants, the influence of atmospheric oxygen, the metamorphosis and movements of the substances out of which the organic cells are formed, the molecular structure of organic cells, and, lastly, the tension of vegetable tissue from mechanical and other causes. To the advantages of this apparently exhaustive distribution of the subject must be added that of excellent typographical arrangements. A line or two at the commencement of each section, in an open type, indicates the subject of the section; the ordinary type gives the essential points; and corroborative and argumentative details follow in a smaller type, which, for ordinary consultation, may be passed over.

It is announced that the whole work is to be completed during the present year. The first volume is to contain the plant-cell and the general morphology of organs by Hofmeister, the succession of buds by Irmisch, and the anatomy of organs of vegetation in vascular plants by De Bary. The second, Cryptogamic volume is to be completed by Pringsheim on Algæ, and Hofmeister on Mosses and vascular Cryptogams. The third is to be devoted to sexual reproduction, by Hofmeister. If this plan be as well carried out to the end as it has been commenced, it will supply one of the greatest wants in the present state of our science: but so active are the researches now made, that even the volume so recently published requires supplementing. The curious observations of Charles Darwin, published in our own Journal, on tendrils and climbing plants, had not yet reached Germany, and would make important additions to Julius Sachs's last chapter. An important paper, also read at one of our recent meetings by a distinguished philosopher who is not one of us or of our science, Mr. Herbert Spencer, seemed to throw a new light upon some of the effects of physical causes in promoting phenomena of vegetable life. This paper, however, being in the printer's hands, I have not yet been able to study it, and therefore refrain from giving expression to any considerations that the hearing it read in extract may have suggested. I can only express a hope that the ingenuity he has shown in conducting some experiments on the circulation of imbibed liquids, may be further applied to the clearing up of some of the numerous still-hidden mysteries of vegetable life.

OBITUARY NOTICES.

The Secretary then read the following Notices of deceased Members:—

On the present occasion the Linnean Society has to deplore the loss by death of an unusual number of its Members, including no less than eighteen Fellows, one Foreign Member, and two Associates.

And not only is the melancholy list numerically large, but it is also extraordinarily heavy in containing the names of some of the most distinguished of modern naturalists.

Botanists will find in it the names of Hooker, Harvey, Lindley, and Montagne, whilst Zoologists have to lament the loss of Richardson, Woodward, Reeve, and Cuming.

Such losses in so brief a space have seldom, if ever, been recorded,—certainly not in the annals of this Society; and our regret is deepened by the consideration, that although some of those whose loss we deplore may well be deemed to have done their work and to have died in the full enjoyment of a well-earned fame, others have been cut off in full activity, from whom the most important contributions to science might have been expected for many years to come.

Richard Dykes Alexander, Esq., was born at Ipswich on the 15th of August, 1788, and died on the 23rd of December last. He became a Fellow of this Society on the 2nd of April, 1822.

He was the eldest son of the late Mr. Dykes Alexander, banker, of Ipswich, in which town he passed the whole of his life. Admitted at a very early age a partner in his father's bank, his delicate health obliged him at the age of 40 to resign his partnership, and he retired, satisfied with a moderate independence, to devote his time, his money, and his powers to the duties of the Society of Friends, of which he was a most distinguished member, and to the prosecution of every good work amongst his fellow townsmen. As an instance of his great zeal in all works of charity, it may be mentioned that at one time, finding the medical wants of the poor were sadly neglected, he entered upon the study, and acquired a very respectable knowledge of medicine and surgery,—a knowledge which he put to practical use by opening a dispensary of his own, where with generous kindness he afforded relief for many years to numerous sufferers; and in addition to this, the East Suffolk Hospital was largely indebted to him for its erection and support.

He also built the convenient and spacious Temperance Hall at Ipswich entirely at his own cost; and was during his whole life an ardent, enthusiastic, and consistent advocate of the temperance movement.

Heinrich Barth, one of the most distinguished in the illustrious host of African explorers, was born at Hamburg on the 16th of February, 1821, and died at Berlin on the 25th of November, 1865.

At a very early age Dr. Barth appears to have set before himself, as the object of his life, the investigation of the history of the course of ancient commerce and civilization amongst the nations inhabiting the Mediterranean basin. With this view he devoted himself with extreme assiduity to classical and historical studies, and to that of modern languages, in the acquirement of which he enjoyed the utmost facility.

Well versed in classical and modern philology, he proceeded to the University of Berlin in 1839, where his studies were continued under the guidance of Lachmann, Zumpt, and other distinguished scholars; and where also he was fortunate enough to attend the lectures of Carl Ritter on geography. Unfortunately, however, he seems never to have had any taste for natural-history studies, his deficiency in which he often had reason in after years so deeply to lament.

In 1840 he visited the Alps and the whole length of the Apennine ridge, the south of Italy, and Sicily, his attention being chiefly directed to the subject I have above adverted to; and the first fruits of his observations respecting it appeared in his Inaugural Thesis in 1844, entitled "Corinthiorum Commercii et Mercaturæ historiæ particula."

Having completed his academical course, Barth in the year 1845 set out upon his long projected travels in the countries adjoining the Mediterranean. But as a preliminary step he came to London, in order to study the remains of ancient art in the British Museum, and also to learn Arabic. From London he proceeded to Paris, and subsequently through France and Spain to Gibraltar, where his actual labours were to commence.

His intention appears to have been to traverse the northern part of the African continent from west to east, but finding it impossible to pass through Morocco, he was compelled to return to Spain and thence proceeded to Algiers. At this early period of the French occupation of the country he was again prevented following the land route he would otherwise have taken, and he went by sea to Tunis, whence he made his way to the sites of

Carthage, Utica, and other ancient towns; but before reaching Egypt he was so unfortunate as to be attacked by robbers, from whom he barely escaped with his life, and with the entire loss of his collections, notes, and drawings, including numerous copies of inscriptions. He reached Alexandria, however, on the 17th of June, after enduring extreme hardships.

Notwithstanding the almost complete loss of his papers, Dr. Barth's accurate memory, with the aid of letters he had written to friends during the course of his journey, enabled him to publish some account of it in 1848, under the title of 'Wanderings in the Coast-lands of the Mediterranean.'

Nothing discouraged by the sufferings he had undergone, Dr. Barth, after a very short stay at home, again started in the prosecution of his design. Proceeding in the first instance to Cairo, he ascended the Nile to Assouan, where he arrived in October 1846, and from thence visited the ruins of Berenice on the Red Sea by a hitherto untrodden route, and thence returned by Cosseir and Tor to Cairo; from whence he proceeded to Gaza, and after a prolonged journey through Palestine and Syria, continued his route through Asia Minor to Constantinople, and after visiting Greece reached his father's house again in December 1847.

After a brief repose he began to prepare himself for the duties of Professor of Geography in the University of Berlin, where he commenced his lectures in 1849.

He was not successful, however, as a teacher, and his course terminated after a few discourses. His labours were to be bestowed in another direction.

In the autumn of 1849 the English Government determined upon sending an expedition to Bornou, in the interior of Africa, with a view to the promotion of commerce and the abolition of the slave trade. The expedition was placed under the command of Mr. James Richardson, with whom were associated Dr. Barth and his fellow countryman Dr. Overweg.

Starting from England in the middle of November, the two Germans reached Tripoli on the 11th of December, where they were joined by Richardson a few days later; but the expedition did not quit Tripoli till the following March. Traversing the Sahara, with considerable risk and occasional suffering, it reached the city of Tintellust, the capital of the kingdom of Air, in September, and Soudan in the month of November. There the expedition, long distracted by divided views and incompatibilities of character, appears to have been broken up, the three members of

which it was composed starting in different directions, with the understanding that they were to meet again at Kukaua in April. Richardson, however, died on the 4th of March, and Barth assumed charge of the mission. Under great difficulties, chiefly arising from want of means, Barth had reached Katsena in February, and Kano, the principal city of the most populous province of the great Fellahah kingdom. There his funds entirely failed; but with the aid of a small loan from the governor of the town he started on his return to Kukaua, which place he reached in April, and where he was joined in the following month by Dr. Overweg. With money again borrowed from the governor, Barth was able to discharge Richardson's servants; and whilst waiting the determination of the British Government with respect to the future destination and direction of the mission, he and his companion employed their time on an expedition to the Lake Tchad and the country of Adamana. It was on this expedition that Dr. Barth discovered the upper stream of the Benue, and thus made known the great water route from the centre of Africa to the Atlantic Ocean. After a visit to the kingdom of Baghirmi, Dr. Barth, on his return to Kukaua, received the required authorization of the British Government, with instructions, at the same time, to relinquish the originally projected route across the equatorial zone of the African continent to the south-east coast, and to make his way westwards to Timbuctoo and the Atlantic shores instead. Shortly afterwards Dr. Overweg died at Kukaua, and Dr. Barth was left alone to pursue his perilous and unknown course to the mysterious "Queen of the West." He lost no time, however, in setting out, and on the 25th of November was on his way towards the Niger, which he reached and crossed near Say on the 20th of June, 1853. Thence directing his march in a north-west direction, through wholly unknown countries, he entered Timbuctoo on the 7th of September, 1853, where he was detained, it may be said a prisoner, for nine months, leaving it on the 11th of May, 1854, on his return homewards. On his route he was fortunate enough to fall in with Dr. Vögel, who was then on his adventurous and fatal journey to the south. Gaining the first sight of the Mediterranean on the 2nd of August, Dr. Barth reached Berlin on the 13th of October, after nearly six years' travel, performed under the greatest dangers and privations, and pursued with the most indomitable perseverance and undaunted courage.

Besides the important geographical results of these labours,

which it would be out of place here to detail, Dr. Barth brought home the most abundant and interesting linguistic and ethnographical materials; and it is only to be regretted that his defective acquaintance with the natural-history sciences should have prevented his adding equally to those important and to us even more interesting branches of knowledge.

The years succeeding his return to Europe were devoted to the preparation of the Account of his African Explorations, which was published simultaneously in German and English in 1857, both versions being the work of his own hand.

The remainder of his life was spent alternately in Hamburg, London, and Berlin, the latter city being his final place of abode.

The publication of his work completed, the still untired energy of Dr. Barth again led him to continue his Mediterranean researches; and with this view he made two journeys,—one in 1862, and the other in 1865. The former was devoted to the exploration of the Danubian provinces and Greece, and the second to Dalmatia and the districts to the east of the Adriatic,—thus completing the entire circuit of the Mediterranean basin, and fulfilling the object which he had placed before himself at the outset of his adventurous life.

Mr. Black was born in 1832, we believe at Forres, in Morayshire, and was from his youth attached to horticulture and botany. He served his apprenticeship under Messrs. Henderson of Dunkeld, where he displayed so much knowledge and enthusiasm in botanical pursuits as led to his being recommended to the notice of the late Sir William Hooker, who selected him for the office of curator of his herbarium in the year 1853, and by whom he was held in the highest regard and esteem during the remainder of his life. Mr. Black retained the office until 1864, when, owing to the failure of his health, he was obliged to seek a warmer climate. The post of Superintendent of the Bangalore Gardens falling vacant at that time, he was recommended by Sir William to fill it; he was appointed immediately on his arrival in India, and fulfilled the duties most ably, until a few weeks before his death. Though his health at first improved, his disease (pulmonary consumption) was not conquered; and he suffered so much during last summer and autumn, that at the urgent desire of his friends he was induced to obtain two months' leave of absence, and to undertake a sea voyage, in the forlorn hope of warding off its consequences. With this object he embarked for Rangoon in November last, on a visit to a brother who was resident there; he

landed in a most precarious state, and, acting under medical advice, he went to sea again, accompanied this time by his brother, on a trip to the Andaman Islands. Four days after embarking his disease terminated fatally, and he was buried on the 5th of December on Table Island, one of the Cocos group, immediately north of the Andamans, in the midst of a tropical vegetation of the utmost luxuriance and beauty. Mr. Black's decease will be greatly regretted by a very large circle both of British and foreign botanists, by all of whom he was most highly valued, not only for the many services he rendered to them, but for the simplicity of his manners, his amiable disposition, and his truly estimable character. His modesty prevented his ever becoming an author, but many botanical works owe much of their value to his industry and knowledge; and at Sir William Hooker's request he drew up a catalogue of the 'Flora of Japan,' which appeared under his own name in Hodgson's 'Japan,' and of which many copies were distributed by his patron in a separate form.

Hugh Cuming, Esq., F.R.S., died on the 10th of August, 1865. He was born at West Alvington, near Kingsbridge, in Devonshire, on the 14th of February, 1791. Remarkable even as a child for his love of plants and shells, the latter taste more especially was largely fostered and developed under the patronage of Colonel Montagu, who resided in the neighbourhood.

Apprenticed to a sail-maker, he was necessarily brought into contact with seafaring men; and in 1819 he made a voyage to South America, and settled at Valparaiso. Here his passion for collecting shells found ample field for its gratification, and was greatly stimulated by the English Consul, Mr. Nugent, and by several officers of the British Navy, and especially by those in the surveying ships under Captains King and Fitzroy. In fact, in 1826, he gave up his business in order wholly to devote himself to his favourite pursuit. With this object he built a yacht, expressly fitted for the collection and stowage of objects of natural history, and a cruise of upwards of twelve months among the islands of the South Pacific amply rewarded him for his toils in dredging and collecting by sea and on shore. On his return to Valparaiso he prepared for a voyage of greater extent, on which he started under peculiar advantages. The Chilian Government granted him the privilege of anchoring in its ports free of charges, and of purchasing stores free of duty; and he was also furnished with letters to the authorities of all the states he visited. After two years spent in exploring the coast from the Island of Chiloe to the Gulf of Con-

chagua, dredging in all the bays and inlets, searching among the rocks and stones at low water, and inland in the plains, river-banks, and forests, Mr. Cuming returned to England with an enormous accumulation of natural-history objects of all kinds. The most important part, however, was the conchological. In 1835 Mr. Cuming undertook a new expedition to the Philippine Islands, a region rich in natural productions, and but little explored, and where his familiar knowledge of the Spanish language and manners would be of great advantage. Here, although dredgings on the shores were not neglected, his attention was more particularly directed to the woods and forests, where he reaped a most abundant harvest of plants, and collected such an immense and magnificent series of land-shells as had never before rewarded the exertions of a collector. In every place Mr. Cuming was the guest of the priest, always the chief personage in the interior of these islands, and by whom he was always assisted in every imaginable way. He was also thus enabled to obtain what was of still greater importance, the services of the children educated in the public schools, and numbering in some places as many as 400 or 500. By the aid of these sharp-eyed auxiliaries, shells which gladdened his eyes by their novelty and exceeding beauty were daily brought to him in prodigious numbers.

After four years spent among these islands, and in short visits to Malacca, Singapore, and St. Helena, Mr. Cuming returned to England with the richest booty ever collected by a single man. His dried plants, which numbered 130,000 specimens, were immediately distributed, as well as his living Orchids, which were numerous and of great beauty. Large numbers of Birds and Reptiles, Quadrupeds and Insects, were added to museums at home and abroad. But the shells formed by far the most important part of his collections. Before leaving England he had brought together from his own American collections and elsewhere the largest and most valuable collection then in existence. By his vast Philippine collections this was increased to an enormous extent; and during the twenty-five years that have since elapsed he was untiringly engaged in its arrangement, completion, and description by various conchologists. It is stated to have contained not less than 30,000 species and varieties, and in most cases several specimens of each.

From time to time he disposed of his duplicate specimens to various public and private collections, and always took pleasure in

acknowledging that his expenses and labours had been amply repaid.

"The great object of my ambition," he said in 1858, "is to place my collection in the British Museum that it may be accessible to all the scientific world, and where it would afford to the public eye a striking example of what has been done by the personal industry and means of one man."

This worthy object has been obtained, and the British Museum has since his death purchased this unrivalled collection, and placed it where its founder's wishes desired it to be.

The Linnean Society, also, owes a special debt of gratitude to Mr. Cuming, who several years since presented to our Library his extensive collection of Conchological Works, into possession of which we have now entered.

William Freeman Daniell, M.D., F.R.C.S., Staff-Surgeon in the Army, was born, I believe, at Liverpool, in the year 1818, so that, having died on the 26th of June last, he would have been forty-seven years of age at the time of his death. In 1841 he became a Member of the Royal College of Surgeons of England, and shortly afterwards entered the medical department of Her Majesty's Army. He then served the whole of his time as Assistant-Surgeon on the pestilential coast of West Africa, and obtained his promotion to the rank of Staff-Surgeon on his return to England in 1853. About this period he was elected Honorary Member of the Pharmaceutical Society. He afterwards proceeded to the West Indies, where he served for some years. In 1855 he was elected a Fellow of the Linnean Society; and in 1857 a Fellow of the Royal College of Surgeons of England. In 1860 he accompanied the "Expeditionary Force" to China, and was present at the taking of Pekin. A short time after his return to England from China he went to the West Indies, and returned from Jamaica in September last, with his constitution completely broken up by the climate and by his devotion to scientific studies; and though he rallied to some extent for a short period, no hopes were entertained of his ultimate recovery, and he died, after a long and painful illness, at Southampton in June last. He was buried at Kensal Green on July 3rd. Dr. Daniell was a valuable contributor to the Museum and 'Journal of the Pharmaceutical Society.' His first contribution to the 'Journal' was in February 1850, "On the D'Amba, or Dakka, of South Africa;" followed by papers "On Zea Mays and other Cerealia of West Africa;" "*Synsepalum dulciferum*, or Miraculous Berry of West Africa;" "*Sansevieria*

guineensis, or African Hemp;" "*Pterocarpus erinaceus*, or Kino-tree of West Africa;" "Katemfa, or the Miraculous Fruit of Soudan;" "Ethiopian, or Monkey Pepper;" "*Cubeba Clusii* of Miguel, the Black Pepper of West Africa;" "Frankincense-tree of West Africa; Amoma of West Africa;" "Egusé Oil, a new Vegetable Product from West Africa;" "*Cæloclyne polycarpa*, the Beberine, or Yellow Dye-tree of Soudan;" "Copals of West Africa;" "Red Canella Bark from the West Indies;" "African Turmeric;" "The *Cascarilla* and other species of Crotons of the Bahama and West India Islands;" "Kola Nut of Tropical West Africa," &c. Many of the specimens described in the above-mentioned papers were afterwards presented to the Museum of the Pharmaceutical Society.

The many specimens which Dr. Daniell brought to this country also furnished materials for valuable papers by Mr. Bennett, Mr. Carruthers, and other botanists. Among these may be mentioned, 1. "Description of the Kobo-tree (*Guibourtia copallifera*, Ben.), a new genus of *Leguminosæ*, collected by Dr. Daniell in Sierra Leone" (Journal of the Linnean Society, vol. i.); 2. "Note on the Species of *Croton* described by Linnæus under the names of *Clutia Eleuteria* and *Clutia Cascarilla*" (ib. vol. iv.), both by Mr. Bennett, who, in commencing the latter paper, thus speaks of his obligations to Dr. Daniell:—"During a late residence in the Bahama Islands, the attention of our indefatigable Member, Dr. Daniell, was especially directed to the species of *Croton* growing in those islands; and I am enabled, by his kind communication of the specimens collected by him, to clear up much of the obscurity in which the species furnishing the Cascarilla barks of commerce have been involved." 3. "On some species of Oaks from Northern China, collected by W. F. Daniell, M.D., F.L.S.," by William Carruthers, Esq., F.L.S. (ib. vol. vi.).

A species of *Amomum* from Western Africa was named in honour of him in 1852 by Dr. Hooker (Journ. Bot. vol. iv. p. 129).

Dr. Daniell was a Fellow of the Royal Geographical Society, and was a contributor to the Journal of that Society, as well as to the Proceedings of other Societies, and to several periodicals. He was also well acquainted with the native languages* of many of the African tribes, and is said to have had some knowledge of Arabic; and in 1849 he published a volume on the 'Medical Topography and Native Diseases of the Gulf of Guinea.' This work is

* During the last few months of his life he was much occupied with a dictionary (?) of the Burbur language, which he did not live to publish.

highly spoken of by those competent to form an opinion on the subject.

From the above summary it may be seen that Dr. Daniell was indefatigable in his labours and researches while on service abroad and at home, and we can now only deplore that one who had not only enlarged the boundaries of science himself, but had also enabled others to do the same, has been removed from us at such an early age. (*Pharmaceutical Journal*, No. 74, slightly condensed, and with some additions in reference to our own Journal.)

Joseph Dickinson, Esq., M.A., M.D., F.R.S. Died on the 26th of July, 1865.

The following excellent memoir of Dr. Harvey is abridged from the 'Gardener's Chronicle,' June 9th, 1866:—

"*William Henry Harvey, M.D., F.R.S., M.R.I.A.*, Professor of Botany in the University of Dublin, &c., &c., was born of Quaker parents on the 5th February, 1811, at Summerville, near Limerick, the residence of his father Joseph M. Harvey, for many years a highly respected and influential merchant in that city.

"From a very early period he manifested an ardent love of plants; and the fact of his father's family frequently spending a portion of the summer at the sea-side, generally at Miltown Malbay, on the coast of Clare, Ireland, afforded him great opportunity for the indulgence of his taste for natural history. This bold and picturesque coast, open to the mighty roll of the Atlantic, abounded in those marine plants which in after life became his special study. The rudiments of knowledge then acquired resulted in forming him some years later into the most eminent Algologist of his day.

"In the year 1824 he was sent to Ballitore School, in the county of Kildare, then conducted by Mr. James White, a man of talent and learning, who encouraged young Harvey in his tastes and pursuits, giving him at the same time an excellent general education.

"For some years after leaving school he was engaged in his father's house of business at Limerick, but natural history absorbed all his spare time and nearly all his energies. His holidays were devoted to excursions and collecting, and he rapidly acquired a thorough acquaintance with plants, especially the Algæ and Mosses of South-western Ireland, and made considerable advances in Entomology and Conchology. Interesting discoveries soon rewarded his exertions and stimulated his zeal. Amongst these one was of a new freshwater shell in the mountains of Killarney, and another of two new habitats for the rare and beautiful Moss,

Hookeria lætevirens. This last discovery led, in 1831, first to a correspondence with the late Sir W. Hooker, and speedily to an attachment which amounted to filial affection for that illustrious and kindly patron of every aspiring botanist. Encouraged by Sir W. Hooker, he sought to devote himself exclusively to science, and made various attempts to obtain a situation or employment abroad that would have permitted of this. For several years this object was frustrated, and, indeed, was only eventually attained under the following singularly sorrowful circumstances. The late Lord Monteagle, then Mr. Spring Rice, a great friend of the Harvey family, had then in his gift the lucrative post of Colonial Treasurer of the Cape of Good Hope, which he intended to present to young Harvey; but unfortunately, by some accident, the appointment was made out in the name of his elder brother, a married man with a large family and thriving business: immediately after this, Mr. Rice, owing to a change of Ministry, retired from office. Great efforts were made to set the matter right with the succeeding Ministry, but in vain; and it was thought best for all parties that the elder brother should accept the appointment, and take the young botanist with him, and thus give him the opportunity of distinguishing himself in that rich field for botanical research. The brother, with his family and our friend, sailed in 1835, and had hardly got settled in the colony when the health of the former gave way suddenly, and it being obvious that he could never resume his duties, application was made at once that his brother should be appointed his successor, and take up the duties of his office on the spot. The answer not arriving, the whole party left the Cape for England early in 1836, when the brother died on the passage.

"On their arrival in England in June, 1836, Mr. Harvey found that his appointment as his brother's successor had already been sent to the Cape, and thither he followed it in August of the same year, and remained till 1839. During these three years he worked intensely hard at his office all day, but spent his mornings in collecting, and his nights at his books and microscopes, till his health breaking down he was compelled to return to Europe in May of that year.

"During this period, besides making many discoveries in flowering plants, Mosses, and Algæ, he sent home numerous papers illustrated by beautiful drawings and analyses of plants, which were published by Sir W. Hooker; and he found time to prepare and publish his excellent 'Genera of South African Plants,' the materials for which were all examined and redescribed by himself.

"In July, 1840, he sailed for the third time for the Cape of Good Hope, where intense application and over-exertion in botanical pursuits again brought on severe disease, and he was compelled to return to England in 1841, and ultimately to resign his colonial appointment.

"After this he appears to have spent a short time in his brother's house of business; but mercantile pursuits had never any charm for him, and in 1843 he became a candidate for the post of Keeper of the Herbarium of Trinity College, Dublin, vacant by the death of Coulter, the Californian and Mexican traveller; Harvey offering at the same time his beautiful herbarium, consisting of upwards of 10,000 species, to the College. The Professorship of Botany fell vacant at the same time, and the College having determnied to unite the two offices, Harvey became a candidate for both, and in spite of powerful opposition, and the fact that a medical degree of the College was a *sine qua non*, he all but carried the day, the College having given him the honorary degree of M.D. to obviate this latter objection. After a good deal of debate it was at last settled that the Professorship should be separate from the Curatorship, the former being given to Dr. Allman, the present distinguished Professor of Natural History in Edinburgh, and the Curatorship to Dr. Harvey, with a salary of £150 per annum and rooms, an arrangement that perfectly satisfied, and indeed, as he said himself, pleased him.

"From this time forth his whole energies were devoted to the prosecution of botanical science. With characteristic conscientiousness he first set himself to arrange and distribute to scientific museums the collections of his predecessor, to arrange the herbarium, and make all ready for the furtherance of science. For several subsequent years he devoted himself chiefly to Algæ, and latterly, at the urgent desire of his friends at Kew, he undertook the 'Flora Capensis,' which occupied most of the latter years of his life.

"In 1847 he became a candidate for, and obtained, the Professorship of Botany in the Royal Dublin Society, vacant by the death of Dr. Litton, to whose modest merits he paid the kindly tribute of dedicating the beautiful South African plant, *Littonia modesta*. This office he continued to hold during his life under its correlative Institution the Museum of Irish Industry, subject to the direction of the Science and Art Department of the Committee of Privy Council on Education.

"In the year 1849 he received a joint invitation from the Smith-

sonian Institution at Washington and the Harvard University at Cambridge, U.S., to visit the United States, and under their auspices to deliver courses of botanical lectures at these and kindred institutions, and also to undertake the arrangement and classification of a large collection of plants in possession of the former. He complied with the proposal, and having performed these services, and visited Canada and the southern shores of Florida in pursuit of his favourite Algæ, he returned home in the year 1850, after an absence of about nine months, to resume his duties in the University of Dublin.

"His great zeal and enthusiasm inspiring him with a wish for a wider field of labour in pursuit of science, he applied to the University for liberty to make a voyage round the globe, chiefly with the object of making himself acquainted with marine plants in their native habitats, and to collect objects of natural history for the herbarium and museum of Trinity College. His wish was granted, and under the auspices of the University he started by the Indian mail in the year 1853 for Ceylon and Australia. He visited the east, south, and west coasts of Australia and Van Diemen's Land; and on his return from the latter to Sydney, finding that some Methodist missionaries were about to visit in the 'John Wesley,' a small vessel belonging to the mission, the various islands in the Southern Pacific, touching at New Zealand, he solicited liberty to accompany them, which was kindly granted, and in June 1855 they sailed for Auckland, the Feejee and Friendly Islands.

"From the Feejee Islands he returned to Sydney, whence he made a voyage to Valparaiso, where his health again gave way; thence he passed north, and crossed the Isthmus of Panama, returning by the West India Mail to England in October 1856, after having expended three years in this scientific voyage round the world.

"On his return to Dublin, in 1856, the Professorship of Botany became vacant through the appointment of his friend Dr. Allman to the chair of Zoology in the University of Edinburgh, and the post was conferred upon him and retained till his death.

"The following is a list of Dr. Harvey's principal works. It does not include the numerous papers communicated to various Botanical periodicals, and especially to 'Hooker's Journal of Botany,' Royal Irish Academy, Dublin Natural History Society, and sundry systematic works of his botanical correspondents and friends.

"In the year 1838 he prepared and published at the Cape of Good Hope his first important botanical work, 'The Genera of South African Plants.' The 'Manual of British Algæ' was brought out in London, 1841; the 'Phycologia Britannica' in 1846–51, 4 vols., and, in London, same years, in 3 vols.; 'Nereis Australis, or Algæ of the Southern Ocean,' London, 1847; 'The Sea-side Book,' London, 1849; 'Phycologia Australica,' London, 1858–63, 5 vols.; 'Flora Capensis, being a Systematic Description of the Plants of the Cape Colony, Caffraria, and Port Natal,' in conjunction with Dr. P. W. Sonder, Dublin, 1859 to 1865, vols. i. to iii.; 'Index Generum Algarum, or a Systematic Catalogue of the Genera of Algæ,' London, 1860; 'Nereis Boreali-Americana, or Contributions to a History of the Marine Algæ of North America,' contained in volumes iii., v., and x. of the Smithsonian Contributions to Knowledge, published in the United States in 1852." Dr. Harvey's only contribution to the publications of this Society is a "Notice of a Collection of Algæ made on the North-west Coast of North America, chiefly at Vancouver's Island, by David Lyall, M.D., R.N., in the years 1859-61" (Journal, vol. vi.).

General Sir John Bennett Hearsey, K.C.B., was a Cornet in 1808; he was present at the battle of Seetabuldie and at the siege and capture of Bhurtpore; in the Punjaub campaign of 1848–49 he was at Chilianwallah and Goojerat, and commanded the cavalry in the pursuit and at the final surrender of the Sikh army. He was several times wounded, and was made a K.C.B. for his services in the great mutiny of 1857. At that time he was in command of the Bengal division, with his headquarters at Barrackpore. Speaking of a chief of long standing in the service, "who to the cost of humanity was in charge of Meerut on that (first) day of evil omen," the Competition Wallah says, "Such a chief was *not* in charge of Barrackpore at the crisis, when foresight, calmness, and judicious severity broke up a battalion of murderous scoundrels, and saved the capital of India from the fate of Cawnpore. Hearsey at Meerut, Neill at Dinapore, and Outram at Allahabad might have saved much of the good blood that was spilled, and much of the bad blood that remained"*. General Hearsey served fifty-three years in India, thirty-four of them without a furlough. He was a most zealous collector, and an untiring observer. It was to him and other officers in India that Professor Westwood was indebted for the materials of that

* Macmillan's Magazine, viii. p. 343.

splendid work, 'The Cabinet of Oriental Entomology.' He died in October last.

Sir W. Jackson Hooker, Knight of the Hanoverian Guelphic Order, and Companion of the Legion of Honour, Corresponding Member of the Institute, D.C.L., LL.D., F.R.S., F.G.S., &c., was born at Norwich, on the 6th of July, 1785, and died at Kew, after a short illness, on the 12th of August, 1865.

His father, a native of Exeter, was descended from the Secretary for Ireland whose name appears as a large contributor to Hollingshed's Chronicles, and was a member of the same family as Richard Hooker, the author of the 'Ecclesiastical Polity.' His son received his education at the High School of Norwich, under the tuition of the Rev. Dr. Foster. Having inherited, through his godfather, William Jackson, Esq., an ample competency in landed property, he determined to devote his life to travelling and to scientific pursuits. Being a keen sportsman, he formed a fine collection of the birds of Norfolk; and becoming very intimate with Messrs. Kirby and Spence, Alexander MacLeay, Esq., and other distinguished entomologists, he also devoted much of his attention to entomology. About this time he also became acquainted with Sir J. E. Smith, by whom he was encouraged to commence the study of botany—afterwards the main pursuit of his life. In 1806, when he came into possession of his estates, he seems to have given up everything for natural history. He made extensive botanical tours in the wildest parts of Scotland, accompanied, first, by Dawson Turner of Yarmouth, his future father-in-law, and afterwards by W. Borrer of Henfield, long the Nestor of English botanists. At this time also he resided much in London, where he made the acquaintance of Sir Joseph Banks, Robert Brown, Drs. Solander and Dryander, &c., and, indeed, of most of the distinguished scientific men of the day.

In 1809 he visited Iceland, which he extensively explored, making large collections in all branches of natural history; but these, together with all his notes and drawings, were totally lost on his way home, through the burning at sea of the ship of marque in which he was returning, and which was bringing Danish prisoners to England. An account of his almost miraculous escape, owing to the arrival of another vessel in mid ocean, will be found in the modest narrative called 'Recollections of Iceland.'

In 1810–11 he made considerable preparations for accompanying Sir Robert Brownrigg to the then little-known island of Ceylon,

of which Sir Robert was appointed Governor. For this purpose he sold his estates, the proceeds of which were invested in business and foreign securities, which, however, were unfortunately ill chosen, and afterwards much decreased in value. Of the zeal with which he carried on his preparations, we may give as an example the fact that he made pen-and-ink copies of the plates and descriptions of the entire MS. series of Roxburgh's Indian plants. His arrangements, however, all came to nothing, as the sanguinary disturbances which immediately afterwards took place in Ceylon prevented his plans from being carried out.

In 1814 he made a botanizing expedition into France, Switzerland, and the north of Italy, which extended over a period of nine months, and in the course of which he became acquainted at Paris and elsewhere with the principal botanists of Europe, thus laying the foundation of an extensive intercourse and correspondence which lasted until his death.

In 1815 he married the eldest daughter of Dawson Turner, of Yarmouth, Esq., and settled at Halesworth, in Suffolk, where his house at once became the rendezvous of British and foreign botanists, and where he commenced the formation of his great herbarium.

His first botanical work was that on the British *Jungermanniæ*, which was completed in 1816. The 'Muscologia Britannica' was published, in conjunction with Dr. Taylor, in 1817, and was followed by the 'Musci Exotici.' These and other works, added to his increasing home and foreign correspondence, fully occupied his time for the next five years of his life. Meanwhile his property had been rapidly deteriorating, and, with an increasing family, he found it necessary to look out for some remunerative scientific employment. He was therefore advised by his friend Sir Joseph Banks to accept the then vacant Regius Professorship of Botany in the University of Glasgow, which, although not a medical man, Sir Joseph was able to procure for him; and in 1820 he accordingly removed to Glasgow, where his life was entirely devoted to botany: he rose early and went late to bed, visited but little, avoiding society except on his occasional journeys to England, and devoted the whole powers of his mind and his pencil to his favourite science. He was a most popular lecturer, his class being sometimes attended by as many volunteers as medical men. He encouraged his students in the pursuit, by taking them on excursions, by giving them rare plants from his duplicates, and by furnishing them with letters of introduction to all

parts of the world when they went abroad. And his success as a teacher was in some degree commensurate with his efforts,—his salary from Government, which on his first appointment to the Chair was only £50, having been increased to £150, and the other emoluments of the Professorship, arising chiefly from students' fees, having risen from less than £60 to about £700, the number of students having increased from twenty-one to upwards of one hundred.

During his residence in Glasgow, also, his merits became so conspicuous that he was twice offered the honour of knighthood, which he accepted from William the Fourth in 1836, the honour being bestowed on him "in consideration of his scientific career and the great services he had rendered to Botany."

But a further, and, in the interests of botanical science, far more important, acknowledgment of his merits was evinced in his appointment, in 1841, to the Directorship of the Royal Gardens at Kew.

It is a curious fact that Sir William Hooker had from the commencement of his botanical career felt a strong interest in Kew, and had never abandoned the secret idea that the time would come when he might hold the post of its Director. For many years during his Glasgow residence, the late John Duke of Bedford had honoured him with his friendship and correspondence, subscribing munificently to the expense of collectors whom he sent out, and by means of his diplomatic relations and friends enlarging Sir William's sphere of action in various parts of the world.

The placing of Kew on a national footing had been for some time a common object both with the Duke and Sir William Hooker; and the former did not fail, before his death in 1839, to urge upon those in political power the fulfilment of his favourite project. Upon his death, his son, the late Duke of Bedford, zealously carried out his father's wishes; but it was upon the present Earl Russell, then Lord John, that the chief weight of the transaction fell; and it is to him, then First Lord of the Treasury, that the nation owes the possession of these magnificent gardens.

In 1841 Mr. Aiton (the Director of all the Royal Gardens, whether fruit, kitchen, or botanical) resigned his post at Kew, having held it for fifty years. He was succeeded by Sir William, who received a salary of £300 per annum, with £200 to enable him to rent such a house as should accommodate his herbarium and library, by this time of immense extent, and essential, we need not say, to the working of the establishment, whether in a

scientific or economic point of view. Sir William entered upon his duties in command of unusual resources for the development of the Gardens, such as had never been combined in any other person. Single in purpose and straightforward in action, enthusiastic in manner, and at the same time prepared to advance by degrees, he at once won the confidence of that branch of the Government under which he worked, which was then known as the Office of Woods and Forests, under the Presidency of Lord Duncannon. To those in office above him he imparted much of the zeal and interest he himself felt, which was proved by constant visits to the Gardens, resulting in invariable approval of what he was doing, and promises of aid for the future. Another means at his disposal, and which he at once brought to bear on the work in hand, was his extensive foreign and colonial correspondence, including especially that with a large number of students whom he had imbued with a love of botany, and who were scattered over the most remote countries of the globe, and several of whom, indeed, remained in more or less active correspondence with the Gardens up to the day of his death. His views were further greatly facilitated by his friendly intercourse with the Foreign and Colonial Offices, the Admiralty, and the East India Company; to all of which departments he had been the means of rendering services, by the recommendation of former pupils to posts in their employment, and by publishing the botanical results of the expeditions they sent out.

At the time of Sir William's taking office the Gardens consisted of 11 acres, with a most imperfect and generally dilapidated series of ten hothouses and conservatories. Most of these have since been gradually pulled down; and, with the exception of the Great Orangery (now used as a museum for woods) and the large architectural house near the garden gates, and which had just previously been removed from Buckingham Palace, not one now remains. They have been replaced by twenty-five structures (in most cases of much larger dimensions), exclusive of the Palm stove, and the hitherto unfinished great Conservatory in the pleasure-grounds.

It might well be supposed that the arduous and continuous labours incident more especially to the organization and establishment of such an institution as that of the Royal Botanic Gardens, and the almost incessant calls upon the time and energies of the Director, would have left Sir W. Hooker but little opportunity or strength during the twenty-four years he occupied that post

for scientific pursuits; such, however, was far from being the case. By keeping up the active habits of his early life, he was enabled to get through a greater amount of scientific work than any other botanist of his own or, perhaps, of any period. He is enumerated by M. Alphonse De Candolle together with Linnæus and Augustin-Pyramus De Candolle, as one of the three most laborious botanists who ever lived; and of these three, his works appear to have been the most numerous; in proof of which it may be mentioned that his own and his joint works are included in six or seven folio, four quarto, and eighty-seven octavo volumes, including in the whole not less than 4094 plates; whilst M. De Candolle estimates that the number of new species described by him equals, if it does not exceed, that of the plants first described by the elder De Candolle—viz. 6350. It should be remarked also that this amazing fecundity was not displayed at the expense of accuracy, few men having so rarely committed a mistake, either in the naming or classification of a new species. Another peculiarity (as it may be termed, in so voluminous a writer and so busy a man) well worthy of record is, the circumstance that Sir W. Hooker, like Linnæus, never left a work unaccomplished; whatever he undertook was undertaken with a full conception of its requirements, and as fully carried out.

His works are for the most part entirely of a descriptive nature, and on the subject of both Cryptogams and Phanerogams, regarded either as connected with the flora of a country or as individual species. The following list, which I extract from M. A. De Candolle's memoir, includes those of most consequence:—

1. British Jungermanniæ, 1 vol. fol., 88 pl., 1813.
2. Musci Exotici, 2 vols. 8vo, plates, 1818–20.
3. Muscologia Britannica, 1 vol. 8vo, 1818.
4. Flora Scotica, 1 vol. 8vo, 1821.
5. British Flora, 2 vols. 8vo, 1830–31.
6. Flora Boreali-Americana, 2 vols. 4to, 1833–40.
7. Icones Filicum, 2 vols., 1829–31, in conjunction with Dr. Greville.
8. Genera Filicum, 8vo, 1842, with 120 plates.
9. Species Filicum, 5 vols. 8vo, 1846-64, with 304 plates.
10. Exotic Flora, 3 vols., 1823–27, with 232 coloured plates.
11. Icones Plantarum, 5 vols. 8vo, 1827–54, with about a thousand plates, mostly drawn by himself.
12. Botanical Magazine, edited by him from 1827 to his death, in more than 25 volumes, with 2700 coloured plates and descriptions.

13. Lastly may be mentioned several other botanical journals published by him from 1830 to 1853, in about 25 volumes, and the greater part of whose contents were from his pen, viz., Botanical Miscellanies, Companion to the Botanical Magazine, Journal of Botany, London Journal of Botany.

After this brief and imperfect survey of Sir W. Hooker's life and labours, it remains to say a few words with respect to his personal character, and the beneficial influence it has had upon the progress of botanical science in this country and, in fact, throughout the world, in no part of which has his influence been unfelt. With this end I cannot do better than quote the words of one who of all men knew him best and is best able to appreciate his worth and the value of his example:—

"An almost unbounded liberality was one of his most prominent features; and scientific botany is more indebted to him than to any individual since Sir Joseph Banks for the progress it has made within the last half century. In his dealings with Government his conduct was as liberal as it was towards his fellow botanists. For the first twelve years of his residence at Kew, his herbarium and library were not only kept up at his own expense for the use and benefit of the public establishment, but were further open to every botanist who came to his house to make use of them. To him we are indebted for the appointment not only of botanists but naturalists to the majority of the Government expeditions of discovery, survey, and research which have been sent out during the last thirty years; and it is through his energy that funds were forthcoming from Government to meet the after-expenses of the publication of their results. To young botanists he was especially kind and helpful; indeed there are few cultivators of this science in Europe or America who have not paid lavish tribute to his generosity and encouragement. Last among his efforts has been the inducing of the Home and Colonial Governments to grant the necessary funds for the publication of the Floras of their possessions; and within the two last years of his life he prevailed upon Sir Charles Wood, then President of the India Board, in like manner to support the publication of the Flora of British India; and through the influence of his steady friend Earl Russell he procured a grant for the publication of the Flora of Tropical Africa."

Whilst, as showing the estimation in which he was held beyond the limits of his own country, I would append the following passages from the pen of Professor Asa Gray, whose long and

intimate friendship with Sir W. Hooker and eminence as a botanist render what he says of his departed friend and fellow labourer well worthy of being reproduced on the present occasion.

"Our survey of what Sir William Hooker did for science would be incomplete indeed, if it were confined to his published works —numerous and important as they are—and to the wise and efficient administration through which, in the short space of twenty-four years, a Queen's flower and kitchen garden and pleasure grounds have been transformed into an imperial botanical establishment of unrivalled interest and value. Account should be taken of the spirit in which he worked, of the researches and explorations he promoted, of the aid and encouragement he extended to his fellow-labourers, especially to young and rising botanists, and of the means and appliances he gathered for their use no less than for his own.

"The singlemindedness with which he gave himself to his scientific work, and the conscientiousness with which he lived *for* science while he lived *by* it, were above all praise. Eminently fitted to shine in society, remarkably good-looking, and of the most pleasing address, frank, cordial, and withal of a very genial disposition, he never dissipated his time and energies in the rounds of fashionable life, but ever avoided the social prominence and worldly distinctions which some sedulously seek. So that, however it may or ought to be regarded in a country where Court honours and Government rewards have a factitious importance, we count it a high compliment to his sense and modesty that no such distinctions were ever conferred upon him in recognition of all that he accomplished at Kew.

"Nor was there in him, while standing in a position like that occupied by Banks and Smith in his early days, the least manifestation of a tendency to overshadow the science with his own importance, or of indifference to its general advancement. Far from monopolizing even the choicest botanical materials which large expenditure of time, and toil, and money brought into his hands, he delighted in setting other botanists to work upon whatever portion they wished to elaborate, not only imparting freely, even to comparatively young and untried men of promise, the multitude of specimens he could distribute, and giving to all comers free access to his whole herbarium, but sending portions of it to distant investigators, so long as this could be done without too great detriment or inconvenience. He not only watched for opportunities of attaching botanists to Government expedi-

tions and voyages, and secured the publication of their results, but also largely assisted many private collectors, whose fullest sets are among the treasures of by far the richest herbarium ever accumulated in one man's lifetime, if not the amplest anywhere in existence."

Francis Ablett Jesse, Esq., F.G.S., was the son of the late John Jesse, of Llanbedr Hall, Denbighshire, well known as a pleasing popular writer on zoological subjects, and who died in September 1863, after having been forty years a Fellow of this Society. Mr. Francis Jesse therefore has at any rate an hereditary claim to the regard of naturalists, and was himself not undistinguished as an entomologist. He died at an early age, on the 22nd November, 1865, having been admitted a Fellow of the Linnean Society on the 5th December, 1861.

John Lee, LL.D., Q.C., F.R.S., &c. &c., died at an advanced age at Hartwell House, his residence, near Aylesbury, on the 25th of February. Though some time a Fellow of this Society, into which he was admitted on the 4th December, 1855, and well known for the encouragement he always afforded to those engaged in natural-history pursuits, Dr. Lee had not himself paid much attention to those branches of science. That to which he was more particularly devoted was Astronomy, which he cultivated with much assiduity with the aid of an observatory he had established at his residence, and with such reputation and success as to lead to his being selected to fill the Chair of the Royal Astronomical Society. Somewhat excentric in his views on various subjects, Dr. Lee was an ardent politician of extreme radical views, a teetotaller, and as great an enemy to tobacco as King James the First. In his character of a politician he, on several occasions, contested the county seat with Mr. D'Israeli, but never with any chance of success.

In him his neighbours have lost an active magistrate, and science has to deplore, if not a very distinguished, yet a very ardent and ready auxiliary.

Edward Frederick Leeks, Esq., a Solicitor by profession, and Secretary of St. Ann's Schools, died November 1, 1865. I am not aware that he had contributed anything to science; but he was an old Fellow of this Society, into which he was admitted in the year 1845.

John Lindley, LL.D., F.R.S., was born at Catton, near Norwich, on the 5th of February, 1799. His father was a nurseryman of considerable ability, and known to gardeners as the author

of 'A Guide to the Orchard and Kitchen Garden.' He was educated at the Grammar School of Norwich, under the head-mastership of the well-known scholar and schoolmaster Dr. Valpy. At this early period of his life Dr. Lindley's pursuits and tastes, as well as his habits of assiduity and perseverance, may be taken as a good illustration of the saying that the "child is the father of the man." He was greatly devoted as a school-boy to the study of plants and of antiquities. At the age of sixteen he quitted school, and was shortly afterwards sent on business to Belgium, in the service of Mr. Wrench, a seed-merchant at Camberwell. On his return from this mission he remained at home with his father, devoting his spare time indefatigably to botany, horticulture, and entomology. The late Sir W. J. Hooker, who was fourteen years his senior, and had also been educated at Dr. Valpy's school, at that time resided in Norwich, and was in the habit of visiting Mr. Lindley at Catton to procure plants and insects. Thus commenced an acquaintance, which was continued after Mr. Hooker's removal to Halesworth, and gradually ripened into a life-long friendship. At Halesworth Lindley may be said to have commenced his laborious literary and scientific labours, with a translation of Richard's 'Analyse du Fruit,' which he finished at a single sitting, which lasted, however, three days and two nights without intermission. This was published in 1819. About this time, his father having met with reverses in business, Lindley proceeded to London, and found employment as Assistant-Librarian to Sir Joseph Banks, to whom he had been already introduced by his friend Mr. Hooker, and of whose liberality and kindness Dr. Lindley always spoke in the warmest terms, and whose assistance at this juncture was the more valuable as Lindley had made himself responsible for his father's debts. Sir Joseph also recommended him to Mr. Cattley to edit the 'Collectanea Botanica.' This work, which is remarkable for the beauty and truth of its illustrations, was published in 1821, and its editor, even at that early period of his career, was able to sign himself a Member of the Imperial Academy of Naturalists of Bonn. But in the previous year Lindley had published his 'Rosarum Monographia,' which was dedicated to Mr. Charles Lyell of Kinorley, the father of the present celebrated geologist, who was so much pleased with the work that he sent the author a cheque for £100. With this money Lindley purchased a microscope and a small herbarium, which formed an important addition to his own collection.

In 1822 Lindley became Garden Assistant Secretary to the Horticultural Society, whose garden at Chiswick was then in process of formation, partly under Lindley's superintendence. In 1826 he was appointed sole Assistant Secretary to the Society, and from this time may be said to have been its mainspring. In 1830, at the time of Mr. Sabine's resignation, owing to circumstances over which Mr. Lindley had no control, the Society got into difficulties, which taxed his energies and attention to the utmost to overcome. But in conjunction with Mr. Bentham, who had succeeded Mr. Sabine as Honorary Secretary, these difficulties were vanquished, chiefly by the institution of exhibitions of flowers and fruit, in place of the former expensive fêtes. Before Mr. Bentham's resignation in 1841, arrangements were made by which almost the whole business which had belonged to the office of Honorary Secretary should fall upon Dr. Lindley, who thereupon took the designation of Vice-Secretary. In this office he continued until 1858, when he became Secretary to the Society and Member of the Council, a position which he held till the Exhibition of 1862, whose overwhelming business, in which he took so active a part, compelled him to relinquish any further share in the management of the Horticultural Society.

Had Dr. Lindley done no more than attend to the affairs of the Society in the way he did, he would have accomplished as much as most men could have done; but his energy was inexhaustible, and until he had passed fifty years he never knew what it was to be tired either in body or mind. In addition to his duties at the Horticultural Society, he filled the Chair of Botany at the London University College, and at the Botanic Garden of the Apothecaries' Company at Chelsea, in which latter establishment he also held the office of '*Præfectus horti.*' He filled the Chair at University College for thirty years, or from 1829 to 1861, and continued to lecture at Chelsea till 1853. His lectures were remarkable for their clearness, conciseness, and the profuseness with which they were illustrated. It was mainly for the use of his numerous pupils in these classes that he published many of his best-known works; but his two general works, the 'Vegetable Kingdom' and the 'Theory of Horticulture,' were the results of long-continued labour bestowed on the collecting and digesting of a vast store of materials.

But the numerous works published under his name, and many of which have undergone several editions, give but a partial idea of the indomitable industry and energy of their author. The

greater part of the descriptions in 'Loudon's Encyclopedia of Plants' were drawn up by him. He also conducted the whole of the 'Botanical Register,' except during the first few years; and with very little assistance 'Lindley and Paxton's Flower Garden.' The excellent botanical articles in the 'Penny Cyclopedia,' down to the letter R, and a treatise on Botany, published by the Society for the Diffusion of Useful Knowledge, were all from his fertile pen. Besides these, to him are due the greater part of the eighth and the whole of the ninth volume of Sibthorp's 'Flora Græca;' and from 1831 to 1837 he was engaged with Mr. William Hutton on the 'Fossil Flora of Great Britain.' He was author, moreover, of several valuable works on horticulture, commencing with the 'Outlines of Horticulture,' which was followed in 1840 by the 'Theory of Horticulture,' which was reproduced in America, and translated into almost every European language, and reached a second edition in this country in 1855, when, its title being changed into 'Theory and Practice of Horticulture,' it obtained a much more extensive sale amongst English practical horticulturists than it had previously enjoyed, notwithstanding its popularity in other countries. Nor in this very scanty enumeration of Dr. Lindley's voluminous writings should be omitted his magnificent 'Sertum Orchidaceum,' which was completed in 1838, the 'Genera and Species of Orchidaceous Plants,' between 1830 and 1840; and a second edition of the latter, under the title of 'Folia Orchidacea,' was commenced in 1852, but never completed, as it ceased to appear in 1859. In the 'Linnean Transactions' there is a beautifully illustrated paper from him on the *Pomaceæ*; and a shorter notice in a subsequent year on the "Anatomy of the Roots of Ophrydeæ." And the Journal of the Society also contains several important papers, chiefly on the subject of Orchidaceous Plants.

In addition to the foregoing labours, we find Dr. Lindley, in conjunction with the late Sir Joseph Paxton, in the year 1841, projecting and establishing the now well known and deservedly popular 'Gardener's Chronicle,' of which he was editor for twenty-five years, and to whose columns he was a constant and invaluable contributor.

With respect to the scientific mode, and the thoroughly honest, manly, and independent spirit in which that journal was conducted by him, it is needless here for me to make any remark. All are well acquainted with it.

Dr. Lindley was a Member of about sixty Scientific Societies,

and became a Fellow of this Society March 20, 1820, and of the Royal Society in 1828; and in 1832 he received the Diploma of Doctor of Philosophy from the University of Munich, and in 1853 was chosen a Corresponding Member of the French Institute. In 1857 he received one of the Royal Medals, in "recognition of the value of his labours in various branches of Scientific Botany," and more especially for his learned and comprehensive works on the Natural Orders of Plants, on the Orchidaceæ, and on Theoretical and Practical Horticulture. To which may be added a passage from the President's Address with reference to horticulture:—"Nor is it too much to say that it is mainly due to his efforts that this branch of knowledge has risen from the condition of an empirical Art to that of a developed Science."

In 1851 Dr. Lindley was one of the Jurors appointed to investigate and report upon the substances used as food displayed in the Great Exhibition of that year, the duties of which office, performed as they would be by him, in conjunction with his other labours, were so onerous that he became in consequence seriously ill. At the time of the second Exhibition, in 1862, he was induced, against the advice of his family, to take charge of the whole Colonial Department; and although constantly complaining of headache, from which he had never before suffered, he refused to abandon his post. The consequence that might have been expected followed; and at the close of the Exhibition it was obvious that his mental and bodily powers had received an injury, from the effects of which they never recovered.

He died, rather suddenly, on the 1st of November, 1865.

Sir John William Lubbock, Bart., M.A., F.R.S., F.G.S., &c., was born on the 26th of March, 1803, the son of Sir John W. Lubbock, Bart.; he died on the 20th of June, 1865, at his residence, High Elms, near Farnborough, in Kent. Sir John was educated at Eton and at Trinity College, Cambridge, where he graduated in 1825, taking high honours in Mathematics. He was a firstrate mathematician, and for many years was devoted to science, and particularly to that of Astronomy, in connexion with which his attention was more particularly directed to questions respecting the Action of the Tides, the Theory of the Moon, and the Perturbations of the Planets, the determination of the distance of a Comet from the Earth, and the elements of its orbit. He was Treasurer of the Royal Society from 1830 to 1835, and again from 1838 to 1845, and was for many years Vice-Chancellor of the University of London. In 1834 the Royal Society awarded

him one of the Royal Medals for his paper "On the Tides;" in 1848 the Astronomical Society gave him a testimonial for his "Researches on the Theory of Perturbation;" and in 1836 he delivered the Bakerian Lecture "On the Tides at the Port of London." Besides these communications, Sir John W. Lubbock contributed many papers on similar subjects in the 'Philosophical Transactions,' the 'Memoirs of the Royal Astronomical Society,' the 'Cambridge Philosophical Society,' and the 'Reports of the British Association.'

He also published several important works on astronomical and mathematical subjects between 1830 and 1840, in which year, on the death of his father, he succeeded to the Baronetcy, and devoted his whole attention, or nearly so, to his business as a Banker in the City of London. One of his last, if not his last, published contributions to science was, however, produced in 1848, when he read a paper to the Geological Society "On Change of Climate, resulting from a change in the Earth's Axis of Rotation"—a paper which, as observed by the late President of the Geological Society, "derives additional interest from the discussions which have been recently carried on."

He became a Fellow of this Society on the 4th of November, 1828, but never contributed anything to our publications.

Thomas White Mann, Esq., M.R.C.S. & L.A.S., was an eminent and much esteemed medical practitioner, residing at Upper Holloway, where he died, after a very short illness, on the 30th of May, 1865, in his fifty-fourth year.

Dr. Jean François Camille Montagne, Member of the Institute of France and of numerous other learned Societies, died on the 9th of January, 1866. The great distinction which he long since attained in all branches of Cryptogamic Botany has rendered his name familiar to science; but many persons are probably unacquainted with the varied scenes of his prolonged career, a short account of which we are enabled to give from M. Hoefer's "Biographie Générale:"—"He was born on the 15th of February, 1784, at Vaudoy (Seine et Marne). He was the son of a surgeon, who died while he was yet an infant, under such circumstances that, from want of sufficient means, he was almost self-educated. At the age of fourteen he went into the navy, into which he entered at Toulon as a master's mate, and soon took part in the expedition to Egypt, where he was employed in the civil department, and ultimately as secretary to the military controller of the navy. In 1802 he returned to France with the army which had

capitulated at Alexandria, and devoted himself to the study of medicine. He qualified as surgeon in 1804, and was attached to the military hospital at Boulogne, and thence sent in 1806 to the army of Naples. In 1807 he was authorized by the Emperor to pass into the guard of King Joseph, and served in the regiment of Grenadiers, of which he became the following year, on the arrival of King Murat, surgeon-major, being at the same time nominated a Knight of the Royal Order of the Two Sicilies. In 1814 he was charged with the surgical service of the Royal Guard of Murat, and in 1815 received the title of Surgeon-in-Chief, and was charged with the superintendence of the medical service of the army. In consequence of a disastrous campaign, the French, in spite of the engagement entered into with the Austrians to respect their liberty, were all made prisoners of war and carried off into the fortress of Arad, in the depths of Hungary. In 1816 they were allowed to return to their country, where, after a year's anxious delay, he obtained his readmission on half-pay as surgeon-major. After having practised medicine at Paris, and, in the intervals of leisure, devoted himself to the study of Greek, for which he had an original predilection, he was recalled to the service as surgeon-major in 1819. He then took part in the Spanish Campaign; and his conduct at the siege of Pampeluna gained for him the Cross of Honour. In 1830 he was made the head of the military hospital at Sedan. Two years later he obtained his discharge, and established himself at Paris. For a long time his taste had turned towards Botany, in which Laurent de Jussieu, Desfontaines, and Claude Richard had been his masters. While in service he visited successively Lorraine, the Vosges, Spain, Brittany, the isles of Hyères, Lyons, the Pyrenees, and Ardennes, where he made large collections. But on his return to Paris he found the study of Cryptogamic plants, to which he was especially attached, almost abandoned in France, or at least so far neglected that travellers were obliged to send their Mosses, Fungi, Lichens, and Algæ to Sweden, Germany, and England for determination. This was the case with Gaudichaud and Auguste de Saint Hilaire, both Members of the Academy. Induced by a desire to be useful, M. Montagne devoted himself with as much zeal as disinterestedness to a branch of botany which had fallen into abeyance, and for twenty years gave up ten hours a day to it. He introduced, described, and figured in great measure almost 2000 species; and to arrive at this result he entered into the most active correspondence with the principal botanists of Europe and America. This perseverance

met at last with its due recompense: after having had seven votes in 1837 as candidate for the Institute, he was elected almost unanimously in 1853 as successor to Achille Richard, and finally, on the 8th of April, 1858, received the cross of an officer of the Legion of Honour."

With regard to Dr. Montagne's contributions to science, a large proportion of them appeared in the 'Annales des Sciences Naturelles.' In the different series of that periodical he described from time to time, in separate Centuries, between 800 and 900 plants belonging to different Cryptogamic orders. Besides these he gave, in the 'Annales des Sciences,' accounts of several different collections of Cryptogamic plants, viz. of the Cryptogams of the neighbourhood of Algiers, collected by M. Roussel, of Brazilian Cryptogams collected by St. Hilaire, of Fungi collected by Drège in tropical Africa, of the Cryptogamic plants of French Guiana, collected by Leprieur, of the Cryptogams of the Neilgherry Hills, collected by Perrottet, of the Cryptogams of the island of Juan Fernandez, collected by Bertero, of the Fungi of Belanger's East-Indian travels, and of the Cryptogams collected during the voyage of the 'Astrolabe' and the 'Zélée.'

Of those of his publications which appeared separately, the principal are, 'The Cryptogams (Algæ, Lichens, Hepaticæ, and Mosses) collected during the voyage of La Bonite;' the "Plantæ Cellulares," forming the last part of the 'Histoire Naturelle des Canaries;' the "Cryptogamia" of Ramon de la Sagra's 'History of Cuba;' the "Algæ, Collemaceæ, and Podaxineæ," and (in conjunction with M. Durieu de Maisonneuve) the "Pyrenomycetes," of the 'Exploration scientifique de l'Algérie;' and the "Cryptogams" of Gay's 'History of Chili.'

In 1856 Dr. Montagne conferred a great boon upon science by collecting and arranging systematically in one volume all the genera and species of Cryptogamic plants described in his separate works and detached papers. This valuable book, familiar to cryptogamic botanists as Montagne's 'Sylloge,' contains also a list of the author's works and papers, to which I must refer those readers who are desirous of a fuller account of his labours than the space at my command enables me to give.

From a notice written by a personal friend of Dr. Montagne, and which appeared in the 'Gardener's Chronicle' of the 20th of January last, we learn that he had for some time been quite incapacitated for any exertion, and had almost lost the power of speech. The eulogistic remarks of the writer in question will be

cordially subscribed to by all botanists, when he says that "his (Dr. Montagne's) decease reminds us forcibly of the fact that the scientific world has sustained a loss which is not likely to be repaired very speedily. Intimate as he was with almost every branch of Cryptogamic Botany, his pen and pencil were ever ready to record the novelties which were pouring into Paris from every quarter; and his extensive correspondence and valuable herbarium gave a precision to his diagnoses which can scarcely be too highly appreciated."

Dr. Montagne's attention was not confined to botany; for he appears to have been a scholar of no mean acquirements, and to have been distinguished also for his musical attainments. In private life he was universally respected for his kindliness and hospitality, and for his genial and entertaining qualities.

He was elected a Foreign Fellow of the Linnean Society on the 2nd of May, 1854; and died at Paris on the 9th of January, 1866, at the age of eighty-two.

Sir Joseph Paxton, M.P., F.R.S., was born in the year 1801, at the village of Milton Bryant in Bedfordshire, where his father was a farmer. Having to work for his livelihood, he selected gardening as his profession, and at the age of 15 entered the service of Sir Gregory Osborne Page Turner, of Battlesden Park, whence, at the end of two years, he went to Woodhall Park, near Watton, Herts, the residence of Samuel Smith, Esq., in whose gardens, then under the charge of Mr. William Griffin, an eminent horticulturist of his day, he continued for three years, and was thus enabled to acquire a thorough practical knowledge of the most important branches of horticulture. On leaving Woodhall he returned to Battlesden, where he filled the post of gardener for two years, and in the autumn of 1823, being then 22, he came to London, and was employed in the garden of the Duke of Somerset at Wimbledon. About this time the Horticultural Society commenced the formation of their garden at Chiswick; and the opportunity for study and improvement in his profession thus afforded was eagerly seized upon by young Paxton, who, upon the recommendation of Mr. Sabine, the Honorary Secretary of the Society, was admitted into the new gardens in 1823, and in the following year appointed foreman of the Arboretum. In this capacity he was fortunate enough to attract the notice of the late Duke of Devonshire, who took great interest in this department of the garden, and had frequent occasion to apply to the foreman for information respecting such trees and shrubs as were

new to him. The trim and neat appearance by which Paxton was always distinguished, combined with his great intelligence and genuine manliness of deportment, made such an impression upon the Duke that in 1826 he engaged him to superintend the gardens and plantations at Chatsworth.

Mr. Paxton had now ample scope for his abilities, and very soon fully justified the Duke's discernment in selecting him. Under his hand, as a writer has observed, the wild Derbyshire region in which Chatsworth stands became the wonderful place which drew visitors from far and near, and set the example of that princely development of grounds and plaisances which now marks the country-seats of our great English families. Its fountains and Italian terraces, its rich woods, laid out and managed with such marvellous skill and care, its vast range of hothouses, where the *Victoria regia* was first induced to blossom, and the Great Conservatory, the precursor of the Crystal Palaces of Hyde Park and Sydenham, all now familiar objects of admiration, were in great measure created by his genius.

Thus attentive to and successful in the performance of his duties, it is no wonder that Mr. Paxton became more and more valued by the Duke; and the skill and abilities he displayed in regard to some financial arrangements induced His Grace to entrust him with the general superintendence of his large estates in Derbyshire. In 1838 he accompanied the Duke abroad for an entire year, during which time, having traversed Switzerland and Italy, he visited Greece, Turkey, Asia Minor, Malta, Spain, and Portugal.

In 1850, however, it was that Paxton's name became almost a household word, in consequence of the unexampled success of his daring plans for the erection of the first Great Exhibition Building in Hyde Park, the history of which is too well known for me here further to refer to it, or to his subsequent connexion with the present Crystal Palace at Sydenham, in which he took so prominent a part, and which, together with the beautiful grounds laid out by him, will long remain a monument of his enterprise and skill.

Sir Joseph Paxton was an industrious writer on horticultural and botanical subjects, and one of the founders of the 'Gardener's Chronicle.'

In 1854 he was returned as Member of Parliament for Coventry, which borough he continued to represent up to his death on the 8th of last June.

Sir Joseph Paxton's career is a striking proof of what a man in this country may achieve by native talent combined with good conduct, industry, and intensity of purpose. And the character of kindliness he has left amongst those who were best acquainted with him shows how little such men are spoilt by the most dazzling success.

James Rankine, Esq., M.D., who was admitted into the Society in 1840, died on the 10th inst. at Irvine, Scotland.

Lovell Reeve, Esq., was born in London on the 19th of April, 1814. After receiving a good classical education, he was apprenticed, at the age of 13, to a grocer on Ludgate Hill, where the accidental arrival of a sailor with a handkerchief full of shells, of which he became the purchaser, led to his becoming an ardent student of Conchology. In the pursuit of this branch of natural history he was much assisted by a Mr. Walker, also a zealous conchologist, as well as by Dr. J. E. Gray. In 1833 he attended the third meeting of the British Association, at Cambridge; and had at that time obtained a sufficient reputation to be appointed, in the Natural-History Section, Conchologist to a general exploring expedition to the fens between Cambridge and Ely.

On the termination of his apprenticeship Mr. Reeve proceeded to Paris, where he made his first contribution to the literature of conchology in the form of a paper "On the Classification of the Mollusca," which was read at a meeting of the Academy. On his return to London he devoted himself with increased earnestness to his favourite study, and shortly afterwards produced his 'Conchologia Systematica,' in two 4to volumes, with 300 plates. His zeal was such that the publication of this work exhausted his funds, even to the sacrifice of his share in his deceased father's estate.

About this time, however, the fortunate and almost accidental purchase of a valuable collection of shells at Rotterdam, made with great care at the Moluccas by the Dutch Governor-General Van Ryder, enabled Mr. Reeve to resume his favourite occupation. He was soon enabled to undertake the publication of an illustrated work on the species of shells, entitled 'Conchologia Iconica,' the value of which has been universally recognized, and which was continued almost uninterruptedly from 1843 down to the time of his death. In 1850 Mr. Reeve also published a useful elementary work, entitled "Elements of Conchology, an Introduction to the Natural History of Shells and of the Animals which form them." And on his removal to Henrietta Street he

became the publisher of many richly illustrated works on botanical and other natural-history subjects, and was afterwards proprietor of the late 'Literary Gazette,' which he edited with great ability, though unfortunately not with great pecuniary success, from 1850 to 1856. His last work, and by some considered his best, 'On the Land and Freshwater Molluscs of the British Isles,' was published in 1863.

In June 1846 Mr. Reeve read a paper before this Society "On the Calcifying Functions of the Cowry and the Olive," which was published in the Proceedings for that year; and in the following year a more important paper, "On the Structure and Comparative Physiology of *Chiton* and *Chitonellus*," which was published in the nineteenth volume of the Linnean Transactions.

In private life Mr. Lovell Reeve was universally respected and esteemed. He died on the 18th of November, 1865, after having endured with the most exemplary patience the acute sufferings caused by a most painful illness.

Sir John Richardson, M.D., C.B., F.R.S., was born in Dumfries in the year 1787, and died at Grassmere, on the 5th of June, 1865. This most distinguished naturalist and Arctic traveller received his early education at the Grammar School of his native town, and at the age of 14 proceeded to Edinburgh for his medical education. In 1807 he entered the Royal Navy as Assistant-Surgeon, in which capacity he was present at the siege of Copenhagen. In 1816 he graduated in Edinburgh, and was appointed Surgeon to the 'Hercules,' 74; and in this and other vessels he continued to serve during the remainder of the war, and more especially in the operations on the coast of Georgia under Sir George Cockburn, in which he was actively engaged in the capacity of surgeon to the marines employed on shore.

In 1819 he was appointed to accompany the first polar land expedition under Sir John Franklin. The extreme hardships and perils undergone by him in common with the rest of this expedition, and the heroic manner in which they were borne, are too well known to need relation here; and the way in which Dr. Richardson's part in it was appreciated by his chief cannot be better given than in Sir John Franklin's own words:—"To Dr. Richardson the exclusive merit is due of whatever collections and observations have been made in the department of natural history; and I am indebted to him in no small degree for his friendly advice and assistance in the preparation of the present narrative."

In the years 1825–28 Dr. Richardson formed part of Franklin's

second expedition to the same regions, in which the exploration of that part of the coasts of the Arctic Sea between the Mackenzie and Coppermine Rivers, a distance of 902 miles, was entrusted solely to him, while Franklin himself proceeded along the coast to the westward and reached a spot within 160 miles of Icy Cape. The two expeditions thus comprised an extent of coast-line of nearly 2000 miles; whilst, as observed by the President of the Royal Geographical Society in his obituary notice of Sir John Richardson, "it was not geography alone that was benefited by their labours; for the meteorological and magnetical observations, combined with those collections in the department of natural history which, while taking a share in the labours of his companions, were the especial vocation of Richardson, rendered the account of these voyages especially interesting to the scientific world; and the publication of that excellent work the 'Fauna Boreali-Americana' proved how well he was qualified for the position he had been selected to fill."

In 1838 Dr. Richardson was appointed Physician to Haslar Hospital, and in 1840 was promoted to the rank of Inspector in the Naval Medical Service; whilst in 1846, in consideration of his eminent services, he received the honour of knighthood.

Undeterred by the dangers and hardships he had undergone in the two previous Arctic expeditions in which he had taken part, and when he had passed his sixtieth year, Sir John Richardson, with almost unexampled devotion to the claims of friendship, again volunteered his services for a third time in the same inclement regions in search of his former chief Sir John Franklin. In this expedition, which was undertaken in company with Dr. Rae, Sir John Richardson descended the Mackenzie River, and traversed the Arctic shores between that river and the Coppermine; an account of which hazardous and, alas! fruitless journey was published in 1851.

The heroic manner in which the various labours and perils of these Arctic journeys were undergone by Sir John Richardson sufficiently shows that, as a geographical explorer, he was a man of indomitable courage, energy, and determination. But, besides this, he possessed an accurate and extensive knowledge of most branches of natural history, amongst which he was, however, more especially devoted to ichthyology, in which he had few superiors, and to which he remained attached to the end of his life.

In personal character, as in his appearance, Sir John Richardson was distinguished by a certain apparent ruggedness, suggestive,

as observed by Sir Roderick Murchison, of the boreal regions, in which so many years of his life had been passed; but beneath this exterior was a warm and feeling heart, and no one was more ready than he to aid to the utmost of his power those who, his close and cautious powers of observation and discrimination (though perhaps silently exercised) showed him, were worthy of his countenance.

Samuel P. Woodward, F.G.S., the son of Mr. Samuel Woodward, of Norwich, was born on the 17th of September, 1821, and died at Herne Bay July 11th, 1865.

Almost always in weak health, and very frequently in a state of great suffering from an asthmatic affection, the amount of scientific work performed by Mr. Woodward in his short life is very surprising. Devoted to the study of natural history, it may be said he showed his aptitude for it even from his infancy; for he assisted, when he had scarcely attained the age of 10 years, in publishing an account of *Trichiosoma lucorum* in the 'Magazine of Natural History,' with an engraving of the insect in all its stages. In the following year he began the study of land and freshwater shells, and commenced the formation of his father's collection. To these pursuits he soon added the study of botany, after which entomology was given up, and he devoted his whole attention to botany and malacology.

In 1838 he came to London to complete his education at the London University College, and soon obtained an appointment in the Library of the British Museum. In 1839 he succeeded Mr. Searles Wood in the post of Subcurator of the Geological Society, the duties of which office necessarily compelled him to add palæontology to his other studies. This post he continued to occupy, with the utmost credit to himself and satisfaction to the Society, till 1848, when he obtained the appointment of Assistant in the Department of Geology and Mineralogy in the British Museum. In 1845 his scientific merits were so well appreciated that he was selected to fill the Chair of Botany and Natural History including Geology at the Royal Agricultural College at Cirencester; and to this were subsequently added the appointments of Examiner for the Council of Military Education, and of Examiner in Geology to the University of London. Dr. Woodward, though not a contributor to our publications, was the author of numerous papers in various scientific and literary periodicals, for the most part on palæontological, geological, and more especially malacozoological subjects, displaying in all he wrote the utmost

acuteness of observation, combined with the most minute attention to accuracy and truth. But the most valuable as well as the most considerable of the works he contributed to science is the excellent 'Manual of Recent and Fossil Shells,' first published in the years from 1851 to 1856. This work speedily took the very first rank among text-books on the subject—and deservedly so, both by the lucidity of its arrangement, the amazing amount of correct information compressed into a small space, and the great amount of original matter contained in it. The Supplement, more especially, containing a detailed account of the geographical distribution of living Mollusca and of the distribution in time of the fossil forms, is particularly deserving of notice as a monument of of the full and accurate information possessed by the author, and as one of the most useful compendiums of what is known on those subjects ever given to the world.

I need say nothing here, where Dr. Woodward was so well known, with respect to his amiable and modest demeanour, and the readiness with which he was at all times willing to aid those who might seek his assistance.

The Secretary also announced that thirty-three Fellows, two Foreign Members, and one Associate had been elected since the last Anniversary.

At the Election which subsequently took place, George Bentham, Esq., was re-elected President; William Wilson Saunders, Esq., Treasurer; and George Busk, Esq., and Frederick Currey, Esq., Secretaries. The following five Fellows were elected into the Council, in the room of others going out:—viz. J. W. Dunning, Esq., Robert Hudson, Esq., J. G. Jeffreys, Esq., Colonel Munro, and William Carruthers, Esq.

Mr. Alfred White, on the part of the Auditors of the Treasurer's Accounts, read the Balance Sheet, by which it appeared that the total Receipts during the past year, including a Balance of £414 19*s.* 2*d.* carried from the preceding year, amounted to £1820 16*s.* 6*d.*, and that the total Expenditure during the same period (including the purchase of an East Indian Railway Debenture for £100) amounted to £1401 14*s.* 1*d.*, leaving a Balance in the hands of the Bankers of £419 2*s.* 5*d.*

June 7, 1866.

George Bentham, Esq., President, in the Chair.

The President nominated J. J. Bennett, Esq., J. D. Hooker, M.D., Sir John Lubbock, Bart., and W. W. Saunders, Esq., Vice-Presidents for the ensuing year.

James Ebenezer Saunders, Esq., was elected a Fellow.

The following Papers were read, viz.:—

1. "On *Myostoma*, a new genus of *Burmanniaceæ*;" by John Miers, Esq., F.R.S. & L.S. (See 'Transactions,' vol. xxv. part 3.)

2. "On two new Genera of *Compositæ* (*Mutisiaceæ*) from India;" by Thomas Thomson, M.D., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

3. "Notes on the New Zealand *Stictæ*;" by W. L. Lindsay, M.D., F.L.S. (See 'Transactions,' vol. xxv. part 3.)

4. "Observations on New Zealand Lichens;" by the same. (See 'Transactions,' vol. xxv. part 3.)

5. "On the Surface-fauna of Mid Ocean.—No. 2. *Foraminifera*;" by Major Samuel R. J. Owen, F.L.S. (See 'Zoological Proceedings,' vol. ix.)

6. "Characters of some undescribed Heterocerous *Lepidoptera*;" by Francis Walker, Esq., F.L.S. (See 'Zoological Proceedings.')

June 21, 1866.

George Bentham, Esq., President, in the Chair.

Dr. Hermann Becker, the Rev. Dr. Bleasdale, and Wentworth Buller, Esq., were elected Fellows.

Mr. E. J. Simmonds exhibited a small collection of Insects, chiefly *Coleoptera*, formed by himself in Tropical Western Africa.

Dr. Trimen, F.L.S., exhibited living plants of a new British *Lemna* (*L. arrhiza*, W.) gathered by him in a pond at Staines.

The following Papers were read, viz.:—

1. "Sertum Angolense;" by Frederick Welwitsch, M.D., F.L.S. (See 'Transactions,' vol. xxvi.)

2. "On Cortical Cuneate Rays, and their origin;" by George Sigerson, M.D., F.L.S.

3. "Note on the presence of four Cotyledons in a Sycamore;" by the same.

4. "Remarks on the formation of the Root-socket of *Lodoicea Seychellarum*;" by the same.

5. "Observations on Dr. Lindsay's Note on *Arthonia melaspermella*;" by William Nylander, M.D. Translated and communicated by the Rev. W. A. Leighton, B.A., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

6. "Hypochlorite of Lime and Hydrate of Potash, two new criteria in the study of Lichens;" by the same. (See 'Botanical Proceedings,' vol. ix.)

7. "Notes on some of the smaller Crustaceans.—1. On the Habits of the *Hyperiidæ*:" by Thomas Edward, A.L.S. (See 'Zoological Proceedings,' vol. ix.)

8. "On the Lingual Bands of the West-Indian Gasteropods;" by J. L. Guppy, Esq., and Jabez Hogg, Esq., F.L.S.

9. "On the *Longicornia* of Australia, with a List of all the described Species, &c.;" by Francis P. Pascoe, Esq., F.L.S., F.Z.S., and late Pres. Ent. Soc. (See 'Zoological Proceedings,' vol. ix.)

Receipts and Payments of the Linnean Society from May 1, 1865, *to April* 30, 1866.

	£	*s.*	*d.*	£	*s.*	*d.*
Balance in the hands of the Bankers at the last audit ...				414	19	2
Admission Fees	192	0	0			
Compositions	310	0	0			
Annual Contributions of £2 2*s.*	39	18	0			
Do. do. of £3 0*s.*	528	13	0			
Transactions and Journal sold	196	19	4			
Dividends on Consols	38	7	0			
Donation from Executors of Sir W. J. Hooker	100	0	0			
				1405	17	4
				£1820	16	6

	£	*s.*	*d.*
Insurance	10	10	0
Repairs and Furniture	27	15	1
Coals, Gas, Tea, Postage, &c.....	103	5	11
Salaries	195	0	0
Expenses of the Society's Publications	882	16	2
Books purchased	50	17	11
Bookbinding and Stationery	15	7	3
Commission	14	17	11
	£1300	10	3
Invested in East-India Railway Debenture	101	3	10
Balance in the hands of the Bankers.....	419	2	5
	£1820	16	6

W. WILSON SAUNDERS, *Treasurer.*

The foregoing Accounts have been examined, and the Balance in hand found to be correctly stated at £419 2*s.* 5*d.*

GEORGE BENTHAM, *President.*
GEORGE BUSK, *Secretary.*

R. C. A. PRIOR,
F. P. PASCOE,
E. H. VINEN,
ALFRED WHITE.

May 21st, 1866.

ADDITIONS

TO THE

LIBRARY OF THE LINNEAN SOCIETY.

RECEIVED FROM JULY 1, 1864, TO JUNE 30, 1866.

[*Continued from Vol. VIII. page* lxviii.]

TITLES.	DONORS.
ACADEMIES AND SOCIETIES.	
Adelaide, S. A.:—	
Philosophical Society.	
Annual Report and Transactions, for the year ending Sept. 30th, 1865. 4to. Adelaide, 1865.	C. A. WILSON, Esq.
Amsterdam:—	
Congrès International de Botanique et d'Horticulture en 1865. 8vo. Rotterdam, 1866.	THE CONGRESS.
Kon. Akademie van Wetenschappen.	
Verhandelingen, Deel 10. 4to. Amsterdam, 1864.	
Verslagen en Mededeelingen. Afdeeling Natuurkunde, Deel 17, und Afd. Letterkunde, Deel 8. 8vo. *Ib.*, 1865.	
Jaarboek voor 1863 & 64. 8vo. *Ib.*	THE ACADEMY.

	TITLES.	DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Basel:—

Naturforschende Gesellschaft.

Verhandlungen. Theil 4, Heft 1 & 2. 8vo. Basel, 1864–66. THE SOCIETY.

Batavia:—

Bataviaasch Genootschap van Kunsten en Wetenschappen.

Verhandelingen, Deel 30 & 31. 4to. Batavia, 1863–64.

Tijdschrift voor Indische Taal-, Land-, en Volkenkunde, Deel 13, & 14, Afl. 1–4. 8vo. *Ib.*, 1863–64.

Notulen van de Algemeene en Bestuurs-Vergaderingen van het B. G., Deel 1 (Afl. 1–4). 8vo. *Ib.*, 1863–64. THE SOCIETY.

Natuurkundig Vereeniging in Nederlandsch Indie.

Natuurkundig Tijdschrift voor Nederl. Indie. Deel 26, 27, & 28, Afl. 1–3. 8vo. Batavia, 1864–65. THE ASSOCIATION.

Bath:—

Microscopical Society.

Extracts from the Minutes of. Nos. 1 & 2. 8vo. Bath, 1862–66. J. W. MORRIS, Esq., F.L.S.

Berlin:—

Botanischer Verein für die Provinz Brandenburg.

Verhandlungen. Jahrgang 1–6. 8vo. Berlin, 1859–64. THE SOCIETY.

Kön. Akademie der Wissenschaften.

Abhandlungen, aus den J. 1863 & 1864. 4to. Berlin, 1864–65.

Monatsberichte, aus den J. 1864–66. 8vo. *Ib.*, 1865–66.

Verzeichniss der Abhandlungen gelehrter Gesellschaften, &c., in der Bibliothek der Akademie. 8vo. *Ib.* 1864. THE ACADEMY.

Verein zur Beförderung des Gartenbaues in der Kön. Preussischen Staaten.

Wochenschrift; redigirt vom Prof. Dr. K. Koch. Jahrg. 7 & 8, & Jahrg. 9, Nos. 1–15. 4to. Berlin, 1864–65. THE SOCIETY.

Bologna:—

Accademia delle Scienze.

Rendiconto, 1859–60, 1860–61, 1861–62, 1862–63, & 1863–64. 8vo. Bologna, 1860–64. THE ACADEMY.

TITLES. DONORS.

ACADEMIES and SOCIETIES (*continued*).

Bombay :—

Government Observatory.

Magnetical and Meteorological Observations, made in 1863. 4to. Bombay, 1864.

SECRETARY OF STATE FOR INDIA IN COUNCIL.

Bonn :—

Naturhistorischer Verein der Preussischen Rheinlande, &c.

Verhandlungen. Jahrgang 21 & 22. 8vo. Bonn, 1864–65.

THE ASSOCIATION.

Boston, Mass. (See also *Cambridge*) :—

American Academy of Arts and Sciences.

Proceedings, Vol. 6, Sheets 11–38. 8vo. 1863–64.

THE ACADEMY.

Society of Natural History.

Journal, Vol. 7, No. 4. 8vo. Boston, 1863.

Proceedings, Vol. 9, Sheets 12–25. 8vo. *Ib.*, 1863–65.

THE SOCIETY.

Brünn :—

Naturforschender Verein.

Verhandlungen, Bd. 2 & 3. 8vo. Brünn, 1864–65.

THE ASSOCIATION.

Brussels :—

Académie Royale des Sciences.

Mémoires, Tome 34. 4to. Bruxelles, 1864.

—— couronnés, &c., Tomes 31 & 32. 4to. *Ib.*, 1863–65.

—— ——. Collection in-8vo, Tomes 15, 16 & 17. 8vo. *Ib.*, 1863–65.

Bulletins. 2e série, Tomes 15–19. 8vo. *Ib.*, 1863–65.

Annuaire. 30e et 31e Années. 12mo. *Ib.*, 1864–65.

THE ACADEMY.

Congrès International d'Horticulture, en Avril, 1864. 8vo.

Bulletin. 8vo. Gand, 1864. THE CONGRESS.

Fédération des Sociétés d'Horticulture de Belgique.

Bulletin, 1864. 8vo. Gand, 1865. THE ASSOCIATION.

Société R. de Botanique de Belgique.

Bulletins, Tomes 1–3, et Tome 4, Nos. 1 & 2. 8vo. Bruxelles, 1862–65. THE SOCIETY.

Caen :—

Société Linnéenne de Normandie.

Bulletin, Vol. 9 (Année 1863–64). 8vo. Caen, 1865.

THE SOCIETY.

	TITLES.	DONORS.

ACADEMIES and SOCIETIES (*continued*).

Calcutta :—

Asiatic Society.

Journal, Vol. 33, and Vol. 34, Part 1 (History, Archæology, &c.), Nos. 1–4; and Part 2 (Physical Science), Nos. 1–4. 8vo. Calcutta, 1864–65. THE SOCIETY.

Cambridge, Mass. :—

Museum of Comparative Zoology, at Harvard College.

Annual Reports of the Trustees and Director, for 1863 & 1864. 8vo. Boston, 1864–65.

Bulletin, pp. 1–70. 8vo; and

Illustrated Catalogue of the Museum, Nos. 1 & 2. 8vo. Cambridge, 1865. THE MUSEUM.

Canada. (See *Montreal* and *Toronto*) :—

Cherbourg :—

Société Imp. des Sciences Naturelles.

Mémoires, Tomes 9 & 10. 8vo. Paris, 1863–64. THE SOCIETY.

Christiania :—

Kong. Norske Frederiks Universitet.

Aarsberetning for 1863. 8vo. Christiania, 1865.

Index Scholarum in Univ. Reg. Fredericiana, anno 1865, habendarum. 4to. *Ib.*, 1865. THE UNIVERSITY.

Copenhagen :—

Kongl. Danske Videnskabernes Selskab.

Oversigt over det Kgl. D. V. S. Forhandlinger, i aar. 1860–1864. 8vo. Kjöbenhavn. THE SOCIETY.

Naturhistoriske Forening.

Videnskabelige Meddelser; udgivne af Selskabets Bestyrelse. Andet Aarti. Aarg. 1–5, & 6, Nos. 1 & 2. 8vo. Kjöbenhavn, 1860–65. THE SOCIETY.

Devonshire Association for the Advancement of Science, Literature, and Art.

Reports of the First and Second Meetings. 8vo. London, 1863–64.

Report and Transactions; Part 3. 8vo. *Ib.*, 1864. THE ASSOCIATION.

Dresden :—

Academia Cæs. German. Naturæ Curiosorum.

Nova Acta, Tom. 31. 4to. Dresdæ, 1864. THE ACADEMY.

Titles.	Donors.

Academies and Societies (*continued*).

Dublin :—

Geological Society.

Journal, Vol. 10, Pt. 2. 8vo. London, &c. 1864.
The Society.

(*Continued as*)

Royal Geological Society of Ireland.

Journal, Vol. 1, Part 1. 8vo. London and Dublin, 1865.
The Society.

International Exhibition.

Kingdom of Italy. Official Catalogue. 8vo. Turin, 1865.

Natural History Society.

Proceedings, Vol. 4, Pt. 2. 8vo. Dublin, 1865.
The Society.

Royal Dublin Society.

Journal, Nos. 31–34. 8vo. Dublin, 1864–65.
The Society.

Royal Irish Academy.

Transactions; Vol. 24. Science, Pts. 4 & 6; Polite Literature, Pt. 2; and Antiquities, Pts. 2–4. 4to. Dublin, 1864–65.

Proceedings, Vol. 8, and Vol. 9, Pt. 1. 8vo. *Ib.*, 1864–65.
The Academy.

Edinburgh :—

Botanical Society.

Transactions, Vol. 8, Parts 1 & 2. 8vo. Edinburgh, 1864–65.
The Society.

Royal Society.

Transactions; Vol. 23, Pt. 3, and Vol. 24, Pt. 1. 4to. Edinburgh, 1864–65.

Proceedings, Vol. 5, No. 62–67. 8vo. *Ib.*, 1864–65.
The Society.

Frankfurt-a.-M. :—

Senckenbergische Naturforschende Gesellschaft.

Abhandlungen, Band 5, Heft 2–4. 4to. Frankfurt-a.-M., 1864–65.
The Society.

Zoologische Gesellschaft.

Der Zoologische Garten: Zeitschrift für Beobachtung, Pflege, und Zucht der Thiere. Herausgegeben von Prof. Dr. C. Bruch. Jahrgang 5, Nos. 2–12. 8vo. Frankfurt-a.-M., 1864.
The Society.

	Titles.	Donors.

Academies and Societies (*continued*).

Geneva:—

Société de Physique et d'Histoire Naturelle.

Mémoires, Tome 17, Ptie. 2, et Tome 18, Ptie. 1. 4to. Genève, 1864–65. The Society.

Giessen:—

Oberhessische Gesellschaft für Natur- und Heilkunde. Bericht 11. 8vo. Giessen, 1865. The Society.

Versammlung Deutscher Naturforscher und Aerzte.

Amtlicher Bericht über die 39te Versammlung, in September 1864. 4to. Giessen, 1865. The Association.

Göttingen:—

Kön. Gesellschaft der Wissenschaften.

Nachrichten, aus den Jahren 1864 und 1865. 12mo. Göttingen, 1865. The Society.

Halifax, N. S.:—

Nova-Scotian Institute of Natural Science.

Transactions, Vol. 2, Part 1. 8vo. Halifax, N. S., 1864. The Institute.

Königsberg:—

Königl. physikalisch-ökonomische Gesellschaft.

Schriften, Jahrg. 4 & 5. 4to. Königsberg, 1863–64. The Society.

Lausanne:—

Société Vaudoise des Sciences Naturelles.

Bulletin, Tome 8, Nos. 51–53. 8vo. Lausanne, 1864–65. The Society.

Leeds:—

Geological and Polytechnic Society of the West Riding.

Report of the Proceedings, for 1863–64. 8vo. Leeds, 1864. The Society.

Philosophical and Literary Society.

Annual Reports, 44 & 45. 8vo. Leeds, 1864–65.

Catalogue of the Library. 8vo. *Ib.*, 1866. The Society.

Leyden:—

Nederlandsche Entomologische Vereeniging.

Tijdschrift voor Entomologie; onder redactie van Prof. J. van der Hoeven, &c. Deel 7, & Deel 8, Afl. 1–4. 8vo. Haarlem and 'S Gravenhage, 1864–65. The Association.

TITLES. DONORS.

ACADEMIES and SOCIETIES (*continued*).

Liverpool:—

Literary and Philosophical Society.

Proceedings, Nos. 18 & 19. 8vo. London, 1864–66.
THE SOCIETY.

Lisbon:—

Academia Real das Sciencias.

Memorias. Classe de Sciencias Mathem., Physicas, e Naturaes. Nova Serie, Tomo 3, Parte 1. 4to. Lisboa, 1863.

——. Classe de Sciencias Moraes, &c. Nova Serie. Tomo 3, Pte. 1. 4to. *Ib.*, 1863.

Quadro elementar das Relações Politicas e Diplomaticas de Portugal; pelo Visconde de Santarem, &c., Tomo 9. 8vo. Lisboa, 1864. THE ACADEMY.

London:—

Art-Union.

Almanac for 1865 & 1866.

Reports of the Council for 1864 and 1865; with Lists of Members. 8vo. London, 1864–65. THE ART-UNION.

British Association for the Advancement of Science.

Reports of the 33rd and 34th Meetings. 8vo. London, 1864–65. THE ASSOCIATION.

Entomological Society.

Transactions. 3rd Series; Vol. 2; Vol. 3, Pts. 1 & 2; Vol. 4, Pt. 1; and Vol. 5, Pts. 1 & 2. 8vo. London, 1864–66. THE SOCIETY.

Geological Society.

Quarterly Journal, Vol. 20, Pts. 3 & 4, Vol. 21, and Vol. 22, Pt. 1. 8vo. London, 1864–66.

List of the Members, November 1, 1864. 8vo.
THE SOCIETY.

Microscopical Society.

Address of the President, February 1866. 8vo. London, 1866. And

List of the Members, 1865. 8vo. *Ib.*

Quarterly Journal of Microscopical Science.—See **Journals.** THE SOCIETY.

Palæontographical Society's publications, Vols. 16–18. 4to. London, 1864–66. PURCHASED.

(See **Davidson,** *Thomas;* **Dawkins,** *W. B.;* **Owen,** *Richard;* **Phillips,** *John;* **Salter,** *J. W.;* **Wood,** *S. V.; and* **Wright,** *Thomas.*)

	TITLES.	DONORS.
ACADEMIES and SOCIETIES (*continued*).		
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Pharmaceutical Society.		
Pharmaceutical Journal and Transactions. 2nd Series, Vol. 5, No. 12, and Vols. 6 & 7. 8vo. London, 1864–66.		THE SOCIETY.
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(See **Bowerbank**, *J. S.*, *and* **Günther**, *A. C. L. G.*)		
Royal Society.		
Philosophical Transactions, Vols. 154 & 155. 4to. London, 1864–65.		
Proceedings, Nos. 65–84. 8vo. *Ib.*, 1864–66.		THE SOCIETY.
Royal Agricultural Society.		
Journal, Vol. 25, Part 2. 8vo. London, 1864.		
——, 2nd Series, Vol. 1, and Vol. 2, Pt. 1. 8vo. *Ib.*, 1865–66.		THE SOCIETY.
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Journal. New Series, Vol. 1, and Vol. 2, Pt. 1. 8vo. London, 1864–66.		THE SOCIETY.
Royal Astronomical Society.		
Memoirs, Vol. 32. 4to. London, 1864.		THE SOCIETY.
Royal College of Physicians.		
Lists of the Fellows, Members, &c., for 1865 & 1866. 8vo. London, 1865–66.		THE COLLEGE.
Royal College of Surgeons.		
Catalogue of the specimens of *Entozoa* in their Museum; by T. S. Cobbold, M.D., F.R.S. 8vo. London, 1866.		THE COLLEGE?
Royal Geographical Society.		
Journal, Vols. 33–35. 8vo. London, 1863–65.		
Proceedings, Vol. 8, Nos. 4–6, Vol. 9, and Vol. 10, Nos. 1–3. 8vo. *Ib.*, 1864–66.		THE SOCIETY.
Royal Horticultural Society.		
Journal. New Series, Vol. 1, Parts 1 & 2, edited by the Rev. M. J. Berkeley, M.A., F.L.S., &c. 8vo. London, 1866.		
Proceedings, Vol. 4, Nos. 10–12, and Vol. 5, Nos. 1–6, 8 & 9. 8vo. *Ib.*, 1864–66.		

TITLES.	DONORS.

ACADEMIES and SOCIETIES (*continued*).

London (*continued*) :—

Royal Horticultural Society (*continued*).

Proceedings. New Series, Vol. 1, Nos. 1–4. 8vo. *Ib.*, 1866. — THE SOCIETY.

Royal Institution.

Proceedings, Vol. 4, Parts 4–7. 8vo. London, 1864–66.

Additions to the Library, No. 6. 8vo. — THE INSTITUTION.

Royal Medical and Chirurgical Society.

Medico-Chirurgical Transactions, Vols. 47 & 48. 8vo. London, 1864–65.

Proceedings, Vol. 4, Nos. 5 & 6, and Vol. 5, Nos. 1–4. 8vo. *Ib.*, 1864–66. — THE SOCIETY.

Society of Arts.

Journal, Nos. 604–710. 8vo. London, 1864–66. — THE SOCIETY.

Zoological Society.

Transactions, Vol. 5, Parts 1–4. 4to. London, 1862–65.

Proceedings of the Scientific Meetings (with Illustrations) for 1863 & 1864. 8vo. *Ib.* — THE SOCIETY.

Lyons :—

Académie Imp. des Sciences, &c.

Mémoires. Classe des Sciences, Tome 13 ; & Classe des Lettres, Tome 11. 8vo. Lyon, 1862–63. — THE ACADEMY.

Société Imp. d'Agriculture, &c.

Annales des Sciences physiques et Naturelles, 3^{e} Série, Tome 7. 8vo. *Ib.*, 1863. — THE SOCIETY.

Société Linnéenne.

Annales, Nouvelle Série, Tome 10. 8vo. Paris, 1863. — THE SOCIETY.

Madras :—

Literary Society.

Madras Journal of Literature and Science. 3rd Series, No. 1. 8vo Madras, 1864. — THE SOCIETY.

Madrid :

Real Academia de Ciencias.

Memorias. 1^{a} Serie. Ciencias exactas, Tomo 1, Pte. 2 ; and ————. 2^{a} Seria. Ciencias fisicas, Tomo 1, Pte. 3, and Tomo 2, Pte. 1. 4to. Madrid, 1863–64.

Resumen de las Actas, &c., en 1861–62. 8vo. *Ib.*, 1863.

	TITLES.	DONORS.

ACADEMIES and SOCIETIES (*continued*).

Madrid (*continued*) :—

Real Academia de Ciencias (*continued*).

Libros del saber de Astronomia, del Rey D. Alfonso X. de Castilla : copilados, &c., por Don Manuel Rico y Sinobas. Tom. 1 & 2. Fol. Madrid, 1863. THE ACADEMY.

Montreal :—

Natural History Society.

Canadian Naturalist and Geologist. New Series, Vol. 1, Nos. 1–6, and Vol. 2, Nos. 1–5. 8vo. Montreal, 1864–65. THE SOCIETY.

Moscow :—

Société Impériale des Naturalistes.

Bulletin, Tomes 36 & 37, and Tome 38, Nos. 1 & 2. 8vo. Moscou, 1863–65. THE SOCIETY.

Munich :—

Kön. Bayer. Akademie der Wissenschaften.

Sitzungsberichte, Jahrg. 1864, Bd. 1, Hft. 3–5, & Bd. 2, Hft. 1–4; 1865, Bd. 1 & 2; & 1866, Bd. 1, Hft. 1 & 2. 8vo. München, 1864–66. THE ACADEMY.

Naples :—

Società Reale di Napoli. Accademia delle Scienze Fisiche e Matematiche.

Atti, Vol. 1. 4to. Napoli, 1863.

Rendiconto. Anno 1, 2, 3, e 4, Fasc. 1–4. 4to. *Ib.*, 1862–65. THE SOCIETY.

Neustadt an der Hayn :—

Pollichia.

Jahresbericht 20 & 21. 8vo. Neustadt a. d. H., 1863. THE SOCIETY.

Newcastle-upon-Tyne :—

Tyneside Naturalists' Field Club.

Transactions, Vol. 6, Part 2. 8vo. Newcastle-upon-Tyne, 1864. THE CLUB.

(*Continued as*)

Nat. Hist. Soc. of Northumberland, Durham, and Newcastle-upon-Tyne.

Natural History Transactions of Northumberland, &c., Vol. 1, Part 1. 8vo. Newcastle-upon-Tyne, 1865. THE SOCIETY.

TITLES.	DONORS.

ACADEMIES and SOCIETIES (*continued*).

New York:—

Lyceum of Natural History.

Annals, Vol. 8, Nos. 1–3. 8vo. New York, 1863–64.

Charter, Constitution, and By-Laws; with a List of the Members, 1864. 8vo. *Ib.* THE LYCEUM.

Palermo:—

R. Istituto Tecnico.

Giornale di Scienze Naturali ed economiche, Vol. 1, Fasc. 1 & 2. 4to. Palermo, 1865. THE INSTITUTE.

Paris:—

Société Botanique de France.

Bulletin, Tome 10, No. 8; Tome 11, Comptes Rendus des Séances, Nos. 1–6, & Revue Bibliographique, Nos. A–F; & Tome 12, C. R., Nos. 1–4, & Rev. Bibl. A, B, D, E & F. 8vo. Paris, 1863-66.

—— Tables alphabétiques des Matières, &c., contenues dans les Tomes 7 & 8. 8vo. *Ib.*, 1865. THE SOCIETY.

Société Entomologique de France.

Annales, 1^{e} Série, Tome 1, Trim. 2, 2 Trim. 3, 3 Trim 3, 4 Trim. 1–3, 5 Trim. 3 & 4; and 4^{e} Série, Tomes 3 & 4. 8vo. Paris, 1832–65. THE SOCIETY.

Petersburg:—

Académie Imp. des Sciences.

Mémoires, 7^{e} Série, Tomes 5–8. 4to. St. Petersbourg, 1862–65.

Bulletin, Tomes 5–8. 4to. *Ib.*, 1863–65. THE ACADEMY.

Philadelphia:—

Academy of Natural Sciences.

Proceedings, Nos. 3–6 for 1862, Nos. 1–5 for 1864, and Nos. 1–5 for 1865. 8vo. Philadelphia, 1862–65. THE ACADEMY.

American Philosophical Society.

Transactions, New Series, Vol. 13, Parts 1 & 2. 4to. Philadelphia, 1865.

Proceedings, Vol. 9, Nos. 70–74. 8vo. *Ib.*, 1863–65.

List of the Members. 8vo. *Ib.*

Catalogue of the Society's Library, Part 1. 8vo. *Ib.*, 1863. THE SOCIETY.

	Titles.	Donors.
Academies and Societies (*continued*).		
Plymouth :—		
Plymouth Institution, and Devon and Cornwall Natural History Society.		
Annual Report and Transactions for 1863–64 and 1864–65. 8vo. Plymouth, 1864–65.		The Institution.
Presburg :—		
Verein für Naturkunde.		
Correspondenzblatt, Jahrgang 2; redigirt von Prof. E. Mack. 8vo. Presburg, 1863.		The Association.
Regensburg :—		
Kön. Bayerische Botanische Gesellschaft.		
Flora, Neue Reihe. Jahrg. 22, Nos. 17–40, Jahrg. 23 (Nos. 1–40), & Jahrg. 24, Nos. 1–9. 8vo. Regensburg, 1864–66.		Purchased.
Stettin :—		
Entomologischer Verein.		
Entomologische Zeitung. Jahrg. 23–26. 8vo. Stettin, 1862–65.		
Linnæa Entomologica, Band 15. 8vo. Leipzig, 1863.		The Association.
Stockholm :—		
Kongl. Svenska Vetenskaps-Akademien.		
Handlingar. Ny Följd. Bandet 4, Häft. 2, & Bd. 5, Hft. 1. 4to. Stockholm, 1864–65.		
Öfversigt af K. V. A. Förhandlingar. Årgång. 20 & 21. 8vo. *Ib.*, 1864–65.		The Academy.
Sydney, N.S.W. :—		
Acclimatisation Society of N. S. Wales.		
Annual Report; and Address delivered at the Annual Meeting of the Society, April 4, 1864, by G. Bennett, M.D., F.L.S., &c. 8vo. Sydney, 1864.		The Society ?
Entomological Society of New South Wales.		
Transactions, Vol. 1, Parts 3 & 4. 8vo. Sydney, 1865.		The Society.
Tasmania :—		
Royal Society.		
Monthly Notices of Papers and Proceedings, for 1863 and 1864. 8vo. Hobart Town.		
Reports for 1861, 1862, 1863, & 1864. 8vo. *Ib.*, 1862–65.		The Society.

TITLES.	DONORS.

ACADEMIES and SOCIETIES (*continued*).

Toronto :—

Canadian Institute.

Canadian Journal of Industry, Science, and Art. New Series. Nos. 52–62. 8vo. Toronto, 1864–66. THE INSTITUTE.

Turin :—

Reale Accademia delle Scienze.

Memorie, Serie 2, Tomo 21. Scienze Fisiche e Matematiche. 4to. Torino, 1865.

Atti, Vol. 1, Disp. 1 & 2. 8vo. *Ib.*, 1866. THE ACADEMY.

Upsal :—

Royal Society of Sciences.

Nova Acta R. Soc. Scientiarum. Series 3, Vol. 5, Fasc. 1 & 2. 4to. Upsaliæ, 1864–65. THE SOCIETY.

University.

Årsskrift, 1863. Mathematik & Naturvetenskap. 8vo. Upsala, 1863. THE R. SOCIETY OF SCIENCES.

Venice :—

Imp. Reg. Istituto Veneto di Scienze, Lettere, ed Arti.

Atti, Serie 3, Tomo 8, Disp. 10, Tomo 9, Disp. 1–10, Tomo 10, Disp. 1–10, & T. 11, Disp. 1–4. 8vo. Venezia, 1862–65.

Memorie, Vol. 11, Parte 2 & 3, & Vol. 12, Pte. 1 & 2. 4to. *Ib.*, 1863–64. THE INSTITUTE.

Victoria :—

Royal Society.

Transactions and Proceedings, Vol. 6. 8vo. Melbourne, 1865. THE SOCIETY.

Vienna :—

Kaiserl. Akademie der Wissenschaften. Mathem.-nat. Classe.

Denkschriften, Bd. 22–24. 4to. Wien, 1864–65.

Sitzungsberichte, Abth. 1, Band 47, Heft. 4 & 5, Bd. 48–51, und Band 52, Hft. 1 & 2; Abth. 2, Bd. 47, Hft. 5, Bd. 48–51, und Band 52, Hft. 1–3. 8vo. *Ib.*, 1863–66.

Anzeiger (=Sitzungen, &c.), Jahrg. 1, Nos. 17–28, Jahrg. 2, und Jahrg. 3, Nos. 1–14. 8vo. *Ib.*, 1864–66. THE ACADEMY.

	TITLES.	DONORS.

ACADEMIES and SOCIETIES (*continued*).

Vienna (*continued*):—

K.-k. geologische Reichsanstalt.

Abhandlungen, Band 4, Heft 5 & 6. (Hörnes: Die fossilen Mollusken des Tertiär-Beckens von Wien, Bd. 2, Hft. 5 & 6.) 4to. Wien, 1865.

Jahrbuch, Band 14, and Bd. 15, Nos. 1–3. 8vo. *Ib.*, 1864–65. THE ASSOCIATION.

K.-k. Zoologisch-botanische Gesellschaft.

Verhandlungen, Bd. 14 (Hft. 1–4). 8vo. Wien, 1864. THE SOCIETY.

Washington:—

Smithsonian Institution.

Smithsonian Contributions to Knowledge, Vols. 13 & 14. 4to. Washington, 1864–65.

—— Miscellaneous Collections, Vol 5. 8vo. *Ib.*, 1864.

—— —— Review of American Birds, in the Museum of the S. I., by S. F. Baird, Assist. Sec. Part 1. 8vo. *Ib.* (1864–65).

Annual Reports of the Board of Regents for 1862 and 1863. 8vo. *Ib.*, 1863–64.

Results of Meteorological Observations made under the direction of the U. S. Patent Office and the S. I., from 1854–59 incl. Vol. 2, Part 1. 4to. *Ib.*, 1864. THE INSTITUTION.

Wiesbaden:—

Verein für Naturkunde im Herzogthum Nassau.

Jahrbücher, Heft 1–18. 8vo. Wiesbaden, 1844–63. THE SOCIETY.

Würzburg:—

Physikalisch-medicinische Gesellschaft.

Würzburger medicinische Zeitschrift, redigirt von H. Bamberger, &c. Band 5, Heft 2–6, Bd. 6, & Bd. 7, Hft. 1. 8vo. Würzburg, 1863–66.

—— Naturwissenschaft. Zeitschr. redigirt von J. Eberth, &c. Bd. 4, Heft 2 & 3, Bd. 5, & Bd. 6, Hft. 1. 8vo. *Ib.*, 1863–65. THE SOCIETY.

Zurich:—

Allgemeine Schweitzerische Gesellschaft.

Neue Denkschriften (Nouveaux Mémoires), Bd. 19–21. 4to. Zürich, 1862–65. THE SOCIETY.

TITLES.	DONORS.

ACADEMIES and SOCIETIES (*continued*).

Zurich (*continued*) :—

Naturforschende Gesellschaft.

Vierteljahrsschrift, redigirt von Dr. Rud. Wolf. Jahrg. 6–8. 8vo. Zürich, 1861–63. — THE SOCIETY.

Anonymous :—

Catalogus Plantarum, &c.; a Catalogue of Trees, Shrubs, Plants, and Flowers, both exotic and domestic, which are propagated for sale, in the gardens near London. Fol. London, 1730. — JOHN MILLAR, Esq., F.L.S.

Cultura das plantas que dão a Quina. 8vo. Lisboa, 1864. (Ed. B. Barros Gomez.) — Dr. B. A. GOMEZ, per Dr. WELWITSCH.

Report of the Commission appointed to inquire into the causes of Decay in Wood Carvings, &c. 8vo. London, 1864. — Prof. WESTWOOD, F.L.S.

Scientia Scientiarum: the origin and objects of the Victoria Institute. 8vo. London, 1865. — R. HARDWICKE, Esq., F.L.S.?

Additional photographs of the skeleton of *Dinornis robustus*, one of the Moas of New Zealand. — THOMAS ALLIS, Esq., F.L.S.

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Portrait (photograph) of Professor Bertoloni, F.M.L.S., in the 90th year of his age. — Prof. CAPELLINI, on the part of the Committee.

TITLES. DONORS.

Agassiz, *Alexander.* Embryology of the Starfish. (From L. Agassiz's Contributions to the Natural History of the United States. Vol. 5.) 4to. (Cambridge, Mass., 1864.) THE AUTHOR.

Anderson, *Thomas.* Catalogue of Plants cultivated in the Royal Botanic Gardens, Calcutta, from April 1861 to September 28, 1864. 8vo. Calcutta, 1865.

—— Report (to the Secretary to the Government of Bengal,) of the damages sustained by the Botanical Gardens, in the Cyclone of the 5th October, 1864. Fcp. folio. 1865. THE AUTHOR.

Andrew, *John A.* Address to the two branches of the Legislature of Massachusetts, January 8th, 1864. 8vo. Boston, 1864.
THE SENATE?

Baer, *Dr. Karl Ernst von.* Nachrichten über sein Leben und Schriften: mitgetheilt von ihm selbst. 8vo. St. Petersburg, 1865.
BARON PAHLEN, *im Namen der Esthländischen Ritterschaft.*

—— Das Fünfzigjährige Doctor-Jubiläum des Geheimraths Karl Ernst von Baer, am 29 August, 1864. 4to. St. Petersburg, 1865.
THE JUBILEE COMMITTEE.

Baines, *Henry.* Flora of Yorkshire.
Supplement to: by J. G. Baker, F.B.S.L. & John Nowell. 8vo. London, 1854. J. G. BAKER, ESQ., F.L.S.

Baird, *T. S.* The Distribution and Migration of North American Birds. (Amer. Journ. of Science and Arts, Vol. 41.) 8vo. 1866.
THE AUTHOR?

Baker, *J. G.* Review of the British Roses, especially those of the North of England. 8vo. Huddersfield, 1864. THE AUTHOR.

Balfour, *J. H.* Class-book of Botany. 8vo. Edinburgh, 1859.

—— Account of a Botanical Excursion to Skye and the Outer Hebrides, during the month of August, 1841. 8vo.

—— Account of a Botanical Excursion to the Mull of Cantyre and the Isle of Islay, in August, 1844. 8vo.

—— Notes of a Botanical Excursion to the Mts. of Braemar, Glenisla, Clova, &c., in August, 1847. 8vo. Edinburgh, 1848.

—— On the Aconitum ferox, Wall. 8vo. Ib., 1849.

—— Sketch of the Life of the late Professor E. Forbes. (Ann. Nat. Hist., 1855.) 8vo.

—— Obituary of Professor George Wilson. (Edinb. Med. Journ., 1860.) 8vo.

—— Description of the Asafœtida plant (Narthex Asafœtida, Falc.). 4to. Edinburgh, 1860.

—— On the Structure of the bark of Araucaria imbricata. (Proc. R. Soc. Edinb., Vol. 4, 1861–62.) 8vo.

	Titles.	Donors.
Balfour, *J. H.*	Description of a new species of Clerodendron, from Old Calabar. (Edinb. new Phil. Journ., N. S., Vol. 15.) 8vo.	
——	Observations on temperature, in connexion with vegetation. 8vo. Edinburgh, 1861.	
——	Description of the fruit and seed of Clerodendron Thomsonæ. (Trans. Bot. Soc. Lond., Vol. 7.) 8vo.	
——	Introductory Remarks on opening Section D of the British Association, at Newcastle-upon-Tyne, on the 26th of August, 1863. 8vo.	
——	On literary and scientific studies in connexion with Medicine. (Edinb. Med. Journ., June 1864.) 8vo.	
——	Notice of the state of the Open-air Vegetation in the Edinburgh Botanic Garden, during December 1863. 8vo.	
——	Biographical sketch of the late John Coldstream, M.D. 8vo. Edinburgh, 1864.	The Author.
Bateman, *James.*	Monograph of Odontoglossum. Parts 2 & 3. fol. London, 1865–66.	The Author.
Bennett, *George.*	Wanderings in New South Wales. 2 Vols. 8vo. London, 1834.	Purchased.
Bentham, *George.*	Flora Australiensis. Vol. 2. (Leguminosæ to Combretaceæ.) 8vo. London, 1864.	The Author.
——	Handbook of the British Flora: illustrated. 2 Vols. 8vo. London, 1865.	The Author.
Bentham, *George,* & **Hooker,** *J. D.*	Genera Plantarum; ad exemplaria imprimis in Herbariis Kewensibus servata, definita. Vol 1, Pars 2. 8vo. Londini, 1865.	The Authors.
Bertoloni, *Ant.*	Flora Italica Cryptogama. Pars 1, Fasc. 3–5, et Pars 2, Fasc. 1. 8vo. Bononiæ, 1859–62.	
——	Miscellanea Botanica. Fasc. 21–24. 4to. Ib., 1861–63.	
——	Piante nuove Asiatiche. 4to. Ib., 1864.	The Author.
Bertoloni, *Giuseppe.*	Delle Malattie e dei Danni che soffre l'Albero del Pero nella Prov. Bolognese. 4to. Bologna, 1860.	
——	Come si comporta il Midollo delle piante Dicotiledonali dopo il suo compiuto Sviluppo. 4to. Ib., 1861.	
——	Illustrazione dei prodotti naturali del Mozambico. Insetti Ditteri. 4to. Ib., 1862.	
——	Descrizione di una nuova Malattia della Canepa nel Bolognese. 4to. Ib., 1862.	
——	Erba Spagna. 8vo. Ib., 1862.	
——	Notizie intorno a cose naturali osservate nei Monti Italiani, &c. 4to. Ib., 1864.	The Author.

TITLES. DONORS.

Bland, *Thomas.* Note on certain Insect Larva-sacs, described as species of Valvatæ. (Ann. Lyc. Nat. Hist., New York, Vol. 8.) 8vo. 1865. THE AUTHOR.

Bouton, *Louis.* Plantes Médicinales de Maurice. 2e édition. 8vo. Port Louis, 1864. THE AUTHOR.

Bowerbank, *J. S.* Monograph of the British Spongiadæ. Vol. 1. (Ray Society Publication.) 8vo. London, 1864. PURCHASED.

Brandt, *J. F.* Mélanges Biologiques, tirés du Bulletin de l'Académie Imp. des Sciences de St. Pétersbourg. Tomes 4 & 5. 8vo. 1861–5.

—— Observationes de Elasmotherii reliquiis. 4to. Petropoli, 1864.

—— Bemerkungen über die Classification der Kaltblütigen Rückenmarkthiere, zur Beantwortung der Frage "Was ist ein Fisch?" 4to. St. Petersburg, 1865.

—— Mittheilungen über die Naturgeschichte des Mammuth oder Mamout (Elephas primigenius). 8vo. Ib., 1866. THE AUTHOR.

Brayley, *E. W.* Inferences and Suggestions in Cosmical and Geological Philosophy. (Proc. Royal Soc., 1865.) 8vo. THE AUTHOR.

Brown, *Robert.* Miscellaneous Botanical Works. (Edited by J. J. Bennett, Esq., F.R.S., &c.) Vol. 1, containing, 1. Geographico-Botanical, and 2. Structural and Physiological Memoirs. (Ray Soc. Publ.) 8vo. London, 1866. PURCHASED.

Brown, *William.* The Natural History of the Salmon, as ascertained by the recent experiments in the artificial spawning and hatching of the ova,.....at Stormontfield, on the Tay. 12mo. Glasgow, 1862. JONATHAN COUCH, ESQ., F.L.S.

Buckman, *James.* Science and Practice of Farm Cultivation. 8vo. London, 1865. THE AUTHOR.

Cassin, *John.* United States Exploring Expedition, in 1838–42, under the command of Charles Wilkes, U.S.N.....Mammalogy and Ornithology. 4to. with a folio of plates. Philadelphia, 1858. PURCHASED.

Charnock, *R. S.* Verba Nominalia; or Words derived from Proper Names. 8vo. London, 1866. THE AUTHOR.

Claparède, *Ed.*, & **Lachmann,** *Joh.* Études sur les Infusoires et les Rhizopodes. Livr. 1 & 2. 4to. Genève, 1858–59. GEORGE BUSK, Esq., F.R.S., Sec. L.S.

Clark, *Hamlet.* Catalogue of Phytophaga (Coleoptera Pseudotetramera). Part 1, with an Appendix, containing descriptions of new species, by H. W. Bates & Rev. H. Clark. 8vo. London, 1866. THE AUTHOR.

	Titles.	Donors.
Cleghorn, *Hugh.*	Report upon the Forests of the Punjab and the Western Himalaya. 8vo. Roorkee, 1864.	The Author.
Cobbold, *T. S.*	Entozoa. 8vo. London, 1864.	Purchased.
Collett, *Robert.*	Zoologisk-Botaniske Observationer fra Gudbrandsdalen og Dovre. 8vo. Christiania, 1865.	The Author?
Cooke, *M. C.*	British Hepaticæ; or Scale-Mosses and Liverworts. (From Hardwicke's Science-Gossip.) 8vo. London, 1865.	
——	Plain and Easy Account of British Fungi. Sm. 8vo. Ib., 1862.	
——	Manual of Botanic Terms. 8vo. Ib. (1862).	
——	Index Fungorum Britannicorum. 8vo. Ib.	
——	The genus Ascobolus, with descriptions of the British species. (Journ. of Bot., 1864.) 8vo.	
——	Decades 1–7 of British Fungi. 8vo.	The Author.
Daubeny, *Charles.*	Essay on the Trees and Shrubs of the Ancients. 8vo. Oxford, 1865.	
——	Letter to the Provost of Oriel on University Extension. 8vo. Ib., 1865.	
——	Address to the Members of the Devonshire Association for the Advancement of Science, &c., delivered at Tiverton, June 28, 1865. 8vo.	The Author.
Davidson, *Thomas.*	Monograph of British Devonian Brachiopoda. Part 6, 1st & 2nd Portions. (Palæontogr. Soc. Publ.) 4to. London, 1864–65.	Purchased.
Dawkins, *W. B.*, & **Sanford,** *W. A.*	British Pleistocene Mammalia. Part 1. (Palæontogr. Soc. Publ.) 4to. London, 1866.	Purchased.
De Candolle, *Alphonse.*	La Vie et les Écrits de Sir William Hooker. (Archives des Sciences de la Bibl. Univ., 1866.) 8vo.	The Author.
De Candolle, *A. P. & Alphonse.*	Prodromus Systematis Naturalis Regni Vegetabilis. Pars 16, Sectio posterior, Fasc. 1. 8vo. Parisiis, 1864.	Purchased.
De Candolle, *Casimir.*	Théorie de l'Angle unique en Phyllotaxie. (Tiré de la Bibl. Univ. &c., Tome 23.) 8vo. 1865.	
——	Mémoire sur la famille des Pipéracées. 4to. Genève, 1866.	The Author.
Denny, *Henry.*	Observations on the distribution of the Extinct Bears of Britain. 8vo. (Leeds,) 1864.	The Author.
Deseglise, *A.*	Observations on the different methods proposed for the classification of the species of Rosa. 8vo. Huddersfield, 1865.	J. G. Baker, Esq.

TITLES. DONORS.

Dieck, *Rudolphus.* Dissertatio inaug. de Sterno Avium. 8vo. Halis Saxonum, 1865. THE AUTHOR?

Douglas, *J. W.*, & **Scott,** *John.* British Hemiptera. Vol. 1. (Ray Soc. Publ.) 8vo. London, 1865. PURCHASED.

Dusseau, *J. L.* Musée Vrolik: Catalogue de la Collection d'Anatomie humaine, comparée et pathologique, de MM. G. & W. Vrolik. 8vo. Amsterdam, 1865. THE AUTHOR *on the part of the Family.*

Eichler, *Dr. A. W.* Ueber die Ursachen des Gummiflusses bei den Kirschbäumen. 8vo. (1862.)

—— Bewegung im Pflanzenreiche. 8vo. München, 1864.

—— Versuch einer Charakteristik der natürlichen Pflanzenfamilie Menispermaceæ. 4to. Ib., 1864. THE AUTHOR.

Esmark, *Lauritz.* Beskrivelse over Brama Raschii, n. sp. 8vo. Christiania, 1862. THE AUTHOR.

Fitch, *Asa.* Reports 3–9 on the noxious, beneficial, and other Insects of the State of New York. 8vo. Albany, 1859–65. THE AUTHOR.

Flower, *T. B.* Flora of Wiltshire. Nos. 8 & 9. 8vo.

—— On the Structure of the Compositæ. 8vo. THE AUTHOR.

Fournier, *Eugène.* Recherches anatomiques et taxonomiques sur la famille des Crucifères, et sur le genre Sisymbrium en particulier. 4to. Paris, 1865. PURCHASED.

Frauenfeld, *Georg, Ritter von.* Das Vorkommen des Parasitismus im Thier- und Pflanzenreiche. 8vo. Wien, 1864. THE AUTHOR.

Fries, *Elias.* Monographia Hymenomycetum Sueciæ. Vol. 2. 8vo. Upsaliæ, 1863. THE AUTHOR.

Garovaglio, *Dr. Santo.* Della Distribuzione Geografica dei Licheni di Lombardia, &c. 8vo. Pavia, 1864.

—— Sui più recenti Sistemi Lichenologici, &c. 8vo. Ib., 1865. REV. W. A. LEIGHTON, F.L.S.

Gould, *John.* Handbook to the Birds of Australia. 2 Vols. 8vo. London, 1865. THE AUTHOR.

Gray, *Dr. J. E.* Handbook of British Water-weeds or Algæ. The Diatomaceæ by W. Carruthers, F.L.S., &c. 12mo. London, 1864. DR. GRAY, F.R.S. & L.S.

Griesbach, *A. H. R.* Flora of the British West India Islands. Parts 6 & 7. 8vo. London, 1864. THE AUTHOR?

	Titles.	Donors.
Günther, *Alb. C. L. G.*	Reptiles of British India. (Ray Soc. Publ.) fol. London, 1864.	Purchased.
——	Record of Zoological Literature. Vol. 1. (1864.) 8vo. Ib., 1865.	Purchased.
Haast, *Julius.*	Report on the Geological Survey of the Province of Canterbury (N. Z.). fcap. fol. Christchurch, Canterbury, N. Z. 1864.	
——	Report on the formation of the Canterbury Plains. fcap. fol. Ib., 1864.	
——	Report on the Geological Exploration of the West Coast. fcap. fol. Ib., 1865.	
——	Report on the Geological formation of the Timaru district, in reference to obtaining a supply of water. fcap. fol. Ib., 1865.	
——	Report on the Headwaters of the River Waitaki. fcap. fol. Ib. (1865.)	The Author.
Hallier, *Ernst.*	Die pflanzlichen Parasiten des menschlichen Körpers. 8vo. Leipzig, 1866.	Purchased.
Harvey, *W. H.*	Thesaurus Capensis. Vols. 1 & 2. 8vo. Dublin, 1859–64.	Purchased.
Harvey, *W. H.*, & **Sonder,** *O. W.*	Flora Capensis. Vols. 2 & 3. 8vo. Dublin, 1861–65.	Purchased.
Heer, *Oswald.*	Die Pflanzen der Pfahlbauten. 4to. Zürich, 1865.	Purchased.
Henderson, *E. G. & A.*	Illustrated Bouquet. Vol. 3, Parts 13–18. fol. London, 1861–64.	Messrs. Henderson.
Henslow, *Rev. J. S.*, **Skepper,** *Edm.*	Flora of Suffolk. 12mo. London (1860).	Purchased.
Hoffmann, *Hermann.*	Icones Analyticæ Fungorum. Abbildungen und Beschreibungen von Pilzen. Heft 4. 4to. Giessen, 1865.	The Author.
Hofmeister, *Wilh.*, &c.	Handbuch der Physiologischen Botanik. Bd. 2 & 4. 8vo. Leipzig, 1865–66.	Purchased.
Hogg, *John.*	On some old maps of Africa, in which the Central Equatorial Lakes are laid down, nearly in their true positions. 8vo. London, 1864.	The Author.
Hooker, *Sir W. J.*	Species Filicum. Vol. 5. 8vo. London, 1864.	The Publisher, W. Pamplin, A.L.S.
Hutton, *F. W.*	Notes on some of the Birds inhabiting the Southern Ocean. (Read before the Nat. Hist. Soc., Dublin, 1865.) 8vo.	(The Author?)

TITLES. DONORS.

Icery, *M. E.* Mémoire sur le Pou à Poche blanche. 8vo. Ile Maurice, 1864. THE AUTHOR?

Jenyns, *Rev. Leonard.* Natural History Museums. Lecture delivered to the Bath Natural History Society, Feb. 21, 1865. 8vo. Bath, 1865. THE AUTHOR.

Jerdon, *T. C.* The Birds of India. 3 Vols. 8vo. Calcutta, 1862–64. THE SECRETARY OF STATE FOR INDIA.

Jones, *J. M.* Contributions to the Natural History of the Bermudas. Part 1. 8vo. Halifax, N. S., 1864. THE AUTHOR.

Journals :—

Annales des Sciences Naturelles. 4e Série, Botanique. Tome 20, Nos. 5 & 6. 8vo. Paris, 1863.

—— 5e Série. Botanique, Tomes 1–3 ; and Zoologie, Tomes 1–4, & Tome 5, Nos. 1–5. 8vo. Ib., 1864–66. PURCHASED.

Annals and Magazine of Natural History. 3rd Series. Nos. 79–102. 8vo. London, 1864–66. DR. FRANCIS, F.L.S., &c.

Archiv für Mikroskopische Anatomie. See **Schultze,** *Max.*

Archiv für Naturgeschichte; von A. F. A. Wiegmann, W. F. Erichson, &c. Jahrg. 29, Hft. 4–6, Jahrg. 30, Hft. 1–5. Jahrg. 31, Hft. 1–4, & Jahrg. 32, Hft. 1. 8vo. Berlin, 1863–66. PURCHASED.

Archives de Botanique: rédigées par M. A. Guillemin, M.D. Tomes 1 & 2. 8vo. Paris, 1833. R. KIPPIST, Libr. L.S.

Athenæum. Parts 438–61. (=Nos. 1910–2013.) 4to. London, 1864–66. THE PUBLISHER.

Botanical Magazine: edited by Sir W. J. Hooker, K.H., &c. 3rd Series. Nos. 235–58. 8vo. London, 1864–66. PURCHASED.

Botanische Zeitung: herausgegeben von Hugo von Mohl & D. F. L. von Schlechtendal. Jahrg. 18 & 19. 4to. Leipzig, 1860–61. F. CURREY, Esq., F.R.S., Sec. L.S.

—— —— Jahrg. 22 Nos. 5 & 24–53, Jahrg. 23 Nos. 1–52, & Jahrg. 24 Nos. 1–19. 4to. Ib., 1864–66. PURCHASED.

Bulletin des Sciences Médicales: publié sous la direction de M. le Baron de Férussac. Tomes 1–6. 8vo. Paris, 1824–25. R. KIPPIST, Libr. L.S.

Canadian Journal of Industry, Science, and Art. See ACAD., Toronto.

Entomologist: conducted by E. Newman, F.L.S., &c. Vol. 2, Nos. 3–29. 8vo. London, 1864–66. THE EDITOR.

TITLES. DONORS.

Journals (*continued*) :—

Entomologists' Annual for 1865 & 1866. 12mo. London, 1865–66.
H. T. STAINTON, Esq., F.L.S.

Entomologists' Monthly Magazine: conducted by T. Blackburn, R. M^c^Lachlan, &c. Nos. 2–23. 8vo. London, 1864–66.
THE EDITOR.

Flora. See ACAD., Regensburg.

Gardeners' Chronicle and Agricultural Gazette: the Horticultural part edited by Prof. Lindley. Nos. 27–53 for 1864; Nos. 1–52 for 1865; & Nos. 1–25 for 1866. fol. London, 1864–66.
PURCHASED.

Ibis; a Magazine of General Ornithology: edited by P. L. Sclater, M.A., Ph.D., &c. Vol. 6. 8vo. London, 1864. PURCHASED.

Ibis; a Quarterly Journal of Ornithology. New Series. Vol. 1 Nos. 1–4, and Vol. 2 Nos. 5 & 6: edited by Alfred Newton, Esq., F.L.S., &c. 8vo. London, 1865–66. PURCHASED.

Intellectual Observer: Review of Natural History, Microscopic Research, &c. Nos. 30–32. 8vo. London, 1864.
THE PUBLISHER.

Jahrbücher für Wissenschaftliche Botanik: herausgegeben von Dr. N. Pringsheim. Bd. 1–3, & 4 Hft. 1–3. 8vo. Berlin, 1858–65.
F. CURREY, Esq., F.R.S., Sec. L.S.

—— Band 4, Hft. 4. 8vo. Ib., 1866. PURCHASED.

Journal of Botany, British and Foreign: edited by B. Seemann, Ph.D., F.L.S., &c. Nos. 19–42. 8vo. London, 1864–66.
PURCHASED.

Journal of Entomology. Vol. 2, No. 11. 8vo. London, 1864.
THE PROPRIETORS.

Linnæa; ein Journal für die Botanik, in ihrem ganzen Umfange: herausgegeben von Dr. von Schlechtendal. Band 32, Hft. 4–6; Band 33; & Bd. 34, Hft. 1–3. 8vo. Halle, 1863–65
THE EDITOR.

London Journal of Botany: by Sir William J.Hooker, K.H., F.L.S., &c. Vol. 7. 8vo. London, 1848. PURCHASED.

Natural History Review; and Quarterly Journal of Biological Science: edited by G. Busk, F.R.S., W. B. Carpenter, M.D., F.R.S., &c. Nos. 15–20. 8vo. London, 1864–65.
PURCHASED.

TITLES. DONORS.

Journals (*continued*) :—

Naturhistorisk Tidskrift; udgivet af Henrik Kröyer. Bind 1–4. 8vo. Kjöbenhavn, 1837–43.

—— Ny Række. Bind 1, Hæfte 2–6; & Bd. 2, Hæfte 1, 4, 5 & 6. 8vo. Ib., 1844–49. PURCHASED.

Philosophical Magazine and Journal of Science. 4th Series. Nos. 185–212. 8vo. London, 1864–66.
W. FRANCIS, Ph.D., F.L.S., &c.

Popular Science Review: edited by H. Lawson, M.D., Nos. 11–19. 8vo. London, 1864–66.
The Publisher, R. HARDWICKE, Esq., F.L.S.

Quarterly Journal of Microscopical Science: ed. by E. Lankester, M.D., F.R.S. & L.S., & G. Busk, F.R.S., Sec. L.S. New Series. Nos. 15–21. 8vo. London, 1864–66.
THE MICROSCOPICAL SOCIETY.

Reader. Nos. 77–183. 4to. London, 1864–66. THE PUBLISHERS.

Scientific Opinion. Nos. 3 & 4. 4to. London, 1866.
THE PUBLISHER?

Walpers:—Annales Botanices Systematicæ; auctore Dr. Car. Mueller. Tom. 6, Fasc. 6–8. 8vo. Lipsiæ, 1864–65.
PURCHASED.

Zeitschrift für Wissenschaftliche Zoologie: herausgegeben von C. Th. von Siebold & Albert Kölliker. Band 14, Heft 2–4; Band 15, Hft. 1–4; & Band 16, Heft 1 & 2. 8vo. Leipzig, 1864–66. PURCHASED.

Zoologist: edited by Edward Newman, F.L.S. Nos. 272–91. (Vols. 22 & 23.) 8vo. London, 1864–65.

—— 2nd Series. Nos. 1–7. 8vo. Ib., 1866. PURCHASED.

Kölliker, *Albert.* Kurzer Bericht über einige im Herbst 1864, an der Westküste von Schottland angestellte, vergleichend-anatomische Untersuchungen. 8vo. Würzburg, 1864. THE AUTHOR.

Kosmann, *Bernardus.* Diss. inaug. de nonnullis Lavis Arveniacis. 8vo. Halis Saxoniæ, 1864. THE AUTHOR?

Kröyer, *H.*, Ed. Naturhistorisk Tidskrift. See **Journals.**

Kunze, *Gustav,* & **Schmidt,** *J. C.* Mykologische Hefte, nebst einem allgemein-botanischen Anzeiger. Heft 1 & 2. 8vo. Leipzig, 1817–23. PURCHASED.

TITLES. DONORS.

Landrin, *Armand.* Coquilles nouvelles. (Lu à la Séance du 13 Dec., 1864, de la Soc. des Sc. Nat. de Seine-et-Oise.) 8vo. (Versailles.)

—— Quelques Monstruosités Végétales, &c. 8vo. Ib., 1865.

—— Notice historique et analytique sur les travaux relatifs à la Coloration des Végétaux. 8vo. (Ib.)

—— Lettres de la Quintinye sur la culture des Melons. (Trad. de l'Anglais, par M. L.) 8vo. (Ib.) THE AUTHOR.

Lartet, *Ed.*, & **Christy,** *Henry.* Reliquiæ Aquitanicæ; being Contributions to the Archæology and Palæontology of Périgord and the adjoining Provinces of Southern France. Parts 1 & 2. 4to. London, 1865–66. THE EXECUTORS OF THE LATE HENRY CHRISTY, Esq.

Leidy, *Joseph.* Cretaceous Reptiles of the United States. 4to. Philadelphia, 1865. THE AUTHOR.

Leuckart, *Rudolf.* Bau und Entwicklungsgeschichte der Pentastomen. 4to. Leipzig & Heidelburg, 1860.
G. BUSK, Esq., F.R.S., Sec. L.S.

Leydig, *Franz.* Naturgeschichte der Daphniden (Crustacea cladocera). 4to. Tübingen, 1860. G. BUSK, Esq., F.R.S., &c.

Liebig, *Justus von.* Induction und Deduction. 8vo. München, 1865.
THE ROYAL ACADEMY, MUNICH.

Linnæus, *C.* Original letter from, to J. F. Dalman, of Stockholm, dated Upsala, 7th January, 1749. THE PRESIDENT AND TREASURER.

Lovén, *S.* Om Östersjön. (Föredrag i Skandinaviska Naturforskare Sälskapet, d. 9 Juli, 1863.) 8vo. (Stockholm, 1864.)
THE AUTHOR.

Lowne, *B. T.* Popular Natural History of Great Yarmouth and its neighbourhood. 8vo. Gt. Yarmouth, 1863. THE AUTHOR.

Lubbock, *John.* Prehistoric Times, as illustrated by ancient remains, and the manners and customs of Modern Savages. 8vo. London, 1865. THE AUTHOR.

McDonnell, *Robert.* Observations on the functions of the Liver. 8vo. Dublin, 1865. THE AUTHOR.

Malherbe, *Alfred.* Monographie des Picidés: ou Histoire Nat. des Picidés Picumninés, Yuncinés, &c. Texte, 2 Vols., & Planches, 2 Vols. fol. Metz, 1861–62. PURCHASED.

Malpighi, *Marcell.* Opera posthuma. fol. Londini, 1697.
DR. PRIOR, F.L.S.

Maly, *Josef.* Nachträge zur Flora von Steiermark. 8vo. (1864.)
DR. PRIOR, F.L.S.

	Titles.	Donors.
Marès, *Paul.*	Nivellement Barométrique dans les Provinces d'Alger et de Constantine. 8vo. 1864.	The Author.
Martins, *Charles.*	Tableau physique du Sahara Oriental de la Province de Constantine. 8vo. Paris, 1864.	
——	La Végétation du Spitzberg comparée à celle des Alpes et des Pyrénées. 4to. Montpellier, 1865.	
—— ——	8vo. Ib., 1865.	
——	Index Seminum Horti Monspeliensis; anno 1865. 4to.	The Author.
Martius, *C. F. Ph. von.*	Flora Brasiliensis. Fasc. 36–38. fol. Lipsiæ, 1864.	Purchased.
——	Vorträge über die Florenreiche; oder Imperia Floræ. 8vo. München, 1865.	The Author.
Mason, *Rev. Francis.*	Natural productions of Burmah; or Notes on the Fauna, Flora, &c. of the Tenasserim Provinces and the Burman Empire. 8vo. Maulmain, 1850.	Purchased.
Massalongo, *A. B.*	Schedulæ Criticæ in Lichenes Exsiccatos Italiæ. 4to. Veronæ, 1855.	The Rev. W. A. Leighton, F.L.S.
Mettenius, *Georg.*	Beiträge zur Kenntniss der Rhizocarpeen. 4to. Frankfurt-a-M., 1846.	Purchased.
Milner, *Rev. Thomas.*	Gallery of Geography. Parts 9–19. 8vo. London (1864).	The Publisher.
Mingaud. *Dr.*	The Arbutus, its propagation and culture. 2nd edition. 8vo. London, 1865.	The Author.
Miquel, *F. A. G.*, Ed.	Annales Musei Botanici Lugduno-Batavi. Tom. 1, Fasc. 4–10; & Tom. 2, Fasc. 1 & 2. fol. Amstelodami, 1863–65.	The Editor.
Mitchell, *John M.*	The Herring, its Natural History, and National Importance. 8vo. Edinburgh, 1864.	Jonathan Couch, Esq., F.L.S.
Morren, *Edouard.*	La Lumière et la Végétation. 8vo. Gand, 1863.	
——	Détermination du nombre des Stomates chez quelques végétaux indigènes ou cultivés en Belgique. 8vo. Bruxelles, 1864.	
——	Hérédité de la Panachure (variegatio). 8vo. Ib., 1865.	
——	Enseignement de la Botanique en Allemagne. 8vo. Gand, 1865.	
——	L'Acclimatation des Plantes. 8vo. Ib., 1865.	The Author.
Mueller, *Ferd.*	Fragmenta Phytographiæ Australiæ. Vol. 4. 8vo. Melbourne, 1863–64.	

TITLES. DONORS.

Mueller, *Ferd.* Plants indigenous to the Colony of Victoria. Lithograms. 4to. Melbourne, 1864–65.
THE AUTHOR, ON BEHALF OF THE VICTORIAN GOVERNMENT.

Nägeil, *Carl.* Entstehung und Begriff der naturhistorischen Art. 2te Auflage. 8vo. München, 1865. THE ROYAL ACADEMY, MUNICH.

Nees ab Esenbeck, *Th. F. L.* Genera Plantarum Floræ Germanicæ, iconibus et descriptionibus illustrata. Fasc. 5, 7, 8, 10, 20, 21, 22, 24, & 31. 8vo. Bonnæ, 1860. PURCHASED.

Newman, *Edward.* History of British Ferns. 4th Edition. 12mo. London, 1865. THE AUTHOR.

——, Ed. Entomologist and Zoologist. See **Journals.**

Newton, *Alfred,* Ed. Ibis. See **Journals.**

Norman, *George.* List of Diatomaceæ occurring in the neighbourhood of Hull. 8vo. (Hull, 1865.) THE AUTHOR.

Nyman, *Car. Frid.* Supplementum Sylloges Floræ Europææ. 8vo. Œrebroæ, 1865. PURCHASED.

Owen, *Richard.* Monograph of the Fossil Reptilia of the Cretaceous Formations: including Suppl. 2, Cretaceous Sauropterygia; Suppl. 3, Iguanodon, &c. (Palæontogr. Soc. Publ.) 4to. London, 1864.

—— Monograph of the Fossil Reptilia of the Liassic Formations. Part 1. (Ib.) 4to. London, 1865. PURCHASED.

Parlatore, *Filippo.* Intorno due Dissertazioni Botaniche di M. A. Poggioli. 8vo. Roma, 1864. SIGN. G. A. POGGIOLI.

—— Studi organografici sui fiori e sui frutti delle Conifere. 4to. Firenze, 1864. THE AUTHOR.

—— Le specie dei Cotoni. 4to. Ib., 1866.

—— —— Tavole. fol. Ib., 1866.
R. COMMISSION FOR THE CULTIVATION OF COTTON, AT FLORENCE.

Peters, *W. C. H.* Naturwissenschaftliche Reise nach Mossambique, in 1842–48. Zoologie.—1. Säugethiere. 5. Insekten und Myriapoden. fol. Berlin, 1852–62. (Large-paper copy.) DR. GRAY, F.R.S. & L.S.

Pettigrew, *J. B.* On the arrangement of the Muscular Fibres in the Ventricles of the Vertebrate Heart. 4to. London, 1864.

—— On the relations, structure, and function of the valves of the Vascular System in Vertebrata. 4to. Edinburgh, 1864.

—— On the Presumption of Survivorship. 8vo. Ib., 1865.
THE AUTHOR.

Phillips, *Henry.* Flora Historica. 2 Vols. 8vo. London, 1824.
R. C. A. PRIOR, M.D., F.L.S.

TITLES. DONORS.

Phillips, *John.* Monograph of British Belemnitidæ. Parts 1 & 2. (Palæontogr. Soc. Publ.) 4to. London, 1865–66. PURCHASED.

'Philocosmus.' Letter to the Trustees of the British Museum, on the condition of the National Collection of Invertebrata. 8vo. London, 1865.

Phœbus, *Philipp.* Die Delondre-Bouchardalschen China-Rinden. 8vo. Giessen, 1864. THE AUTHOR.

Piesse, *Sept.* Lecture on Perfumes, Flower-farming, &c., delivered before the R. Horticultural Society. 4to. THE AUTHOR?

Poggioli, *M. A.* De amplitudine Doctrinæ Botanicæ qua præstitit Frid. Cæsius commentatio; ed. Jos. Poggioli. 8vo. Romæ, 1865. THE EDITOR.

Pringsheim, *Nathan,* Ed. Jahrbücher für Wissensch. Botanik. See Journals.

Printz, *H. C.* Beretning om en Botanisk Reise i Valders, foretagen i Sommeren 1864. 8vo. Christiania, 1865. THE AUTHOR?

Pritchard, *Andrew.* History of Infusoria; including the Desmidiaceæ and Diatomaceæ. 4th edition. 8vo. London, 1861. PURCHASED.

Purgotti, *Sebastiano.* Nota intorno alcuni scritti inediti di M. A. Poggioli. 8vo. Perugia, 1864. SIGN. G. A. POGGIOLI.

Quaritch, *Bernard.* Catalogue of Books offered for sale, by. 8vo. London, 1864. MR. QUARITCH.

Quetelet, *Ad.* Histoire des Sciences Mathématiques et Physiques, chez les Belges. 8vo. Bruxelles, 1864.

—— Observations des Phénomènes périodiques des plantes et des Animaux, pendant 1861 & 1862. (Mém. Acad. R. de Belgique, Tome 35.) 4to. THE AUTHOR.

Quetelet, *A.*, **Linster de Pulkowa,** &c. Sur les époques comparées de la feuillaison et de la floraison à Bruxelles, à Stettin, et à Vienne. (Bull. Acad. R. Belg., 2e Série, Tome 19.) 8vo. M. QUETELET.

Raddi, *G.* Reisen in den Süden von Ostsibirien; in den J. 1855–59. Bd. 3, Hft. 1. (Monopetalæ, bearb. von F. v. Herder.) 8vo. Moskau, 1864. M. E. REGEL.

Ralph, *T. S.* On the Parasitic origin of Pleuro-pneumonia in Cattle: being the Report made to the Pleuro-pneumonia Commission. 8vo. (Melbourne,) 1864.

—— Observations and Experiments with the Microscope on the effects of Prussic Acid on the Animal Economy. 8vo. 1865. THE AUTHOR.

TITLES. DONORS.

Reeve, *Lovell.* Conchologia Iconica. Monographs of the genera Ancillaria, Carinaria, Erato, Marginella, Ovulum, Sigaretus, Solarium, and Tornatella. 4to. London, 1864–65. THE AUTHOR.

Regel, *E.* Bemerkungen über die Gattungen Betula und Alnus. 8vo. Moskau, 1866. THE AUTHOR.

Regel, *E.* & **Herder,** *F. ab.* Enumeratio Plantarum in regionibus Cis- et Transiliensibus a cl. Seminovio anno 1857 collectarum. 8vo. Mosquæ, 1864. M. E. REGEL.

Roper, *F. C. S.* Catalogue of Works on the Microscope, and of those referring to Microscopical subjects. 8vo. (London), 1865. THE AUTHOR.

Ruprecht, *J. F.*, & **Brandt,** *F.* Zur Geschichte der Museen der Kais. Akademie der Wissenschaften. 1. Das Botanische Museum. 2. Das Zoologische & Vergleichend-Anatomische Museum. 4to. HERR BRAND.

Rüttemeyr, *L.* Beiträge zu einer Palæontologischen Geschichte der Wiederkauer, zunächst an Linné's Genus Bos. 8vo. Basel, 1865. C. DARWIN, Esq., F.R.S., L.S., &c.

Salisbury, *R. A.* Genera of Plants. A fragment, containing part of Liriogamæ. 8vo. London, 1866. THE EDITOR, DR. GRAY, F.R.S. & L.S.

Salter, *J. W.* Monograph of the British Trilobites. Parts 1–3. (Palæontogr. Soc. Publ.) 4to. London, 1864–66. PURCHASED.

Scacchi, *Arcangelo.* Della Polisimmetria dei Cristalli. 4to. Napoli, 1863. THE AUTHOR?

Schultz-Bipontinus, *Carl H.* Lychnophora, Martius; und einige benachbarte Gattungen. (Festgabe des 50-jährigen Doctor-Jubiläums, 30 März 1864, des..Dr. von Martius.) 8vo., and large-paper copy in 4to. Neustadt a. d. Hayn. THE AUTHOR.

Schultze, *Max.* Archiv für Mikroskopische Anatomie. Band 1. 8vo. Bonn, 1865. PURCHASED.

Sclater, *P. L.*, Ed. Ibis. See **Journals.**

Scott, *John.* See **Douglas,** *J. W.*

Selys-Longchamps, *Edm. de.* Synopsis des Agrionines. 3ᵉ Légion. Podagrion. 8vo. Bruxelles, 1862. THE AUTHOR.

Shortt, *John.* Handbook to Coffee-planting in Southern India. 8vo. Madras, 1864.

—— Medical History of Woman in S. India. 8vo. London, 1864.

—— Account of some rude tribes, the supposed Aborigines of S. India. (Proc. Madras Government, Revenue Department, May 17, 1864.) fcp. fol.

TITLES. DONORS.

Shortt, *John.* Report on the Rot in Sheep. (Proc. Madras Government, Revenue Department, July 13, 1864.) fcp. fol. THE AUTHOR.

Smith, *J. E.*, **Sowerby,** *James*, &c. English Botany. 3rd edition. By J. T. B. Syme, Mrs. Lankester, &c. Nos. 19–42. 8vo. London, 1864–66. The Publisher, R. HARDWICKE, Esq., F.L.S.

——. Supplement to. No. 81. 8vo. London, 1865.
J. W. SALTER, A.L.S.

Solms-Laubach, *Hermann, Comes in.* Diss. inaug. de Lathrææ generis positione systematica. 8vo. Berolini, 1865.
DR. VON SCHLECHTENDAL, F.M.L.S.

Sowerby, *G. B.* Thesaurus Conchyliorum. Part 23. 8vo. London, 1864. PURCHASED.

Stainton, *H. T.* Natural History of the Tineina. Vol. 9. 8vo. London, 1865. THE AUTHOR.

Steenstrup, *J. Jap. Sm.* Om Skjævheden hos Flynderne, og navnlig om Vandringen af det övre Öie fra Blindsiden til Öiesiden tvers igjennem Hovedet, m. m. 8vo. Kjöbenhavn, 1864.

—— Om Flynderslægtere Zeugopterus og Bygmingen af dens Gjællehule. 8vo. Ib., 1865. THE AUTHOR.

Swalve, *Bernh.* Alcali et Acidum; sive, Naturæ et Artis Instrumenta pugilica, &c. 12mo. Amstelodami, 1670.
J. COUCH, Esq., F.L.S.

Thwaites, *G. H. K.*, & **Hooker,** *J. D.* Enumeratio Plantarum Zeylaniæ. Part 5. 8vo. London, 1864. W. PAMPLIN, A.L.S.

Todd, *Robert B.* Cyclopædia of Anatomy and Physiology. Vols. 1–4 (in five). 8vo. London, 1835–52. Vol. 5. (Supplem.) Ib., 1859. PURCHASED.

Tulasne, *L. R. & Car.* Selecta Fungorum Carpologia. Tom. 3. 4to. Parisiis, 1865. PURCHASED.

Vrij, *J. E. de.* On the cultivation of Quinine in Java and British India. (Translated from the Dutch.) 8vo. London, 1865.
C. R. MARKHAM, Esq., F.L.S.

Walpers. Annales Botanices. See **Journals.**

Wawra, *Heinrich.* Botanische Ergebnisse der Reise Seiner Majestät des Kaisers von Mexico, Maximilian I, nach Brasilien (1859–60). fol. Wien, 1866. PURCHASED.

Weidemeyer, *J. W.* Catalogue of N. American Butterflies. 8vo. Philadelphia, 1864. THE AUTHOR?

Titles.	Donors.
Welwitsch, *Frederick.* The cultivation of Cotton in Angola: translated by A. Saraiva, Esq. 8vo. London (1861).	The Author.
West, *Tuffen.* On the structure of the Egg in Scatophaga. (Trans. Microsc. Soc., 1866.) 8vo.	The Author.
Willkomm, *Maur.*, & **Lange,** *Joan.* Prodromus Floræ Hispanicæ. Vol. 2, Pars 1. 8vo. Stuttgartiæ, 1865.	Purchased.
Wood, *S. V.* Monograph of Eocene Mollusca: or, Descriptions of Shells from the Older Tertiaries of England. Part 2. (Palæontogr. Soc. Publ.) 4to. London, 1864.	Purchased.
Woods, *Rev. J. E. T.* History of the discovery and Exploration of Australia. 2 Vols. 8vo. London, 1865.	The Author.
Wright, *Thomas.* Monograph on the British Fossil Echinodermata from the Cretaceous Formations. Vol. 1, Part 1. (Palæontogr. Soc. Publ.) 4to. London, 1864.	
—— Monograph on the British Fossil Echinodermata from the Oolitic Formations. Vol. 2, Part 2. (Ib.) 4to. Ib., 1866.	Purchased.
Yates, *James.* Some account of a Volume containing portions of Ptolemy's Geography, and of the 'Geographi Græci minores.' 8vo. London, 1864.	The Author.

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PROCEEDINGS

OF THE

LINNEAN SOCIETY OF LONDON.

(SESSION 1866-67.)

November 1st, 1866.

George Bentham, Esq., President, in the Chair.

Charles Fryer, M.D., Gerard Krefft, Esq., George Manners, Esq., and Henry Powell, M.D., were elected Fellows.

The special thanks of the Society were ordered to be presented to H. D'Orville, Esq., for his valuable donation of a MS., entitled "Vermes. Mollusca," by the late Colonel George Montagu, F.L.S., and a volume of illustrative drawings, by Mrs. D'Orville.

Specimens of Vegetable Fibres from the neighbourhood of Santos, Brazil, were exhibited by Captain R. F. Burton, H.M. Consul at Santos.

The following Papers were read :—

1. "Account of the *Sclerotium stipitatum* (Berk. et Currey) of Southern India;" by John Shortt, M.D., F.L.S. &c. (See 'Botanical Proceedings,' vol. ix.)

2. "List of *Diatomaceæ* collected by Dr. David Lyall, R.N., of the N.W. Coast of British North America Boundary Commission, 1858–59;" by F. Kitten, Esq. Communicated by Dr. Hooker, F.R.S., V.P.L.S., &c. (See 'Botanical Proceedings,' vol. ix.)

3. "List of *Cladonieæ* collected in Iceland, Färö, and Norway;" by W. L. Lindsay, M.D., F.R.S.Ed., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

4. Experimental investigations with Cestoid *Entozoa*;" by T. S. Cobbold, M.D., F.R.S., L.S., &c. (See 'Zoological Proceedings,' vol. ix.)

5. "Enumeration of the species of *Acanthaceæ* of India, Ceylon, Burmah, and the Malayan Peninsula;" by Thomas Anderson, M.D., F.L.S., Superintendent of the Royal Botanic Gardens, Calcutta. (See 'Botanical Proceedings,' vol. ix.)

November 15th, 1866.

George Bentham, Esq., President, in the Chair.

Edward Atkinson, Esq., M.R.C.S., and the Rev. Charles Henry Middleton, B.A., were elected Fellows.

Mr. Jonathan Couch, F.L.S., of Polperro, exhibited specimens of a *Fucus* (*Halyseris polypodioides*, Ag.) found attached to a stone brought up by a Cornish fisherman from the depth of 15 fathoms, in September 1865.

Mr. Stainton, F.L.S., exhibited two living specimens of a small moth (*Stathmopoda Guerinii*) not previously seen alive in this country, and made some observations on the habits of the insect and its larva. Dr. Staudinger, of Dresden, had lately visited Celles-les-bains, in the Department of Ardèche, in the South of France, and had there found the larvæ of this little moth, in long pod-like galls, formed by Aphides, at the ends of the twigs of *Pistacia terebinthus*, some of the galls being a foot in length. The galls evidently appeared to be caused by the *Aphides*, of which they generally contained many hundreds; and the Lepidopterous larvæ fed on the inner walls of the gall.

The posture of the little moth in repose was very peculiar—the hind legs being brought forward, and stuck out sideways, and

considerably raised. With the hind legs held in this position the moth would walk for some distance on the other two pairs of legs.

Mr. S. also exhibited a drawing of the *Stathmopoda pedella* of Linnæus.

Captain Bulger, F.L.S., exhibited, on the part of Captain Annesley, drawings of the two sexes of a large moth (*Phalæna Atlas*, L.) taken in the neighbourhood of Closaputt, in Mysore, where the species appears to be very rare.

Mr. John Hogg, F.L.S., exhibited a young cone of *Wellingtonia*, produced in his garden at Stockton-on-Tees, upon a tree six years old, and 3 ft. 11 in. high.

The following Papers were read :—

1. "Monograph of *Bambuseæ*, with descriptions of all the genera and species;" by Colonel Munro, C.B., F.L.S., &c. (See 'Transactions, vol. xxvi. part 1.)

2. "Monograph of the genus *Lemonias*; with descriptions of new species in the collection of the British Museum, including other forms sometimes placed in that genus;" by Arthur G. Butler, F.Z.S., Assistant in the Zoological Department, British Museum. Communicated by Dr. J. E. Gray, F.R.S & L.S., V.P.Z.S. (See 'Zoological Proceedings,' vol. ix.)

3. "On some new Fungi from Mexico;" by the Rev. M. J. Berkeley, M.A., F.L.S. (See 'Botanical Proceedings,' vol. ix.)

4. "Gum Copal from Old Calabar;" by Andrew Murray, Esq., F.L.S.

5. A letter addressed to Dr. David Moore, F.L.S., of Glasnevin, by Miss S. M. Hamilton, of Grey Town, Nicaragua, on the so-called 'Gum Copal,' or 'Locust-tree Gum,' of that country.

December 6th, 1866.

George Bentham, Esq., President, in the Chair.

Henry Reeks, Esq., George Ure Skinner, Esq., Harry James Veitch, Esq., and John Gould Veitch, Esq., were elected Fellows.

The following Papers were read:—

1. "On *Pauropus*, a new type of Centipede;" by Sir John Lubbock, Bart., F.R.S., V.P.L.S., Pres. Ent. Soc., &c. (See 'Transactions,' vol. xxvi. part 1.)

2. "On the habits of the *Hyperiidæ*;" by Thomas Edward, A.L.S. (See 'Zoological Proceedings,' vol. ix.)

December 20th, 1866.

George Bentham, Esq., President, in the Chair.

Charles Joseph Hyde Allen, Esq., was elected a Fellow.

Mr. Daniel Hanbury, F.L.S., exhibited an extensive collection of *Bignoniaceæ*, formed by M. Joaquim Correa de Mello, at Campiñas, Province of San Paulo, Brazil.

Baron Eugénie de Ransonnet, exhibited a series of beautiful and accurate sketches and lithographs, by himself, of views of vegetation in Ceylon and the peninsula of India, including views taken by himself through a diving-bell, at a depth of from 8 to 10 fathoms under water.

The following Papers were read:—

1. "On some points in the Morphology of the *Malvales*, together with a description of a new genus of *Buettnerieæ*;" by M. T. Masters, M.D., F.L.S. &c. (See 'Botanical Proceedings,' vol. x.)

2. "Description of Three New Genera from West Tropical Africa, belonging to the Natural Orders *Guttiferæ*, *Olacineæ*, and *Celastraceæ*;" by Professor Oliver, F.R.S. & L.S., Keeper of the Kew Herbarium. (See 'Botanical Proceedings, vol. x.)

3. "Notes on Introduced Plants occurring in the neighbourhood of Sydney, New South Wales;" by William Woolls, Esq., F.L.S. (See 'Botanical Proceedings,' vol. x.)

January 17th, 1867.

Present.

George Bentham, Esq., President, in the Chair.

Morton Allport, Esq.; the Rev. John Croombie Brown, LL.D.; James Fischer, Esq.; John Murphy, Esq., Surg. R.N.; and A. Thozet, Esq., were elected Fellows.

Mr. Samuel Stevens, F.L.S., exhibited several specimens of the *Euplectella aspergillum*, or "Venus's Flower-basket," from Manilla.

Mr. Daniel Hanbury, F.L.S., exhibited specimens, in alcohol, of a Balanophoraceous plant (*Scybalium fungiforme*, Schott & Endl.) collected at Campiñas, in Southern Brazil, by Señor J. Correa de Mello.

The following Papers were read:—

1. "Remarks on *Distoma clavatum* from a Sword-fish," by T. Spencer Cobbold, M.D., F.R.S., F.L.S., Lecturer on Comparative Anatomy at the Middlesex Hospital. (See 'Zoological Proceedings,' vol. ix.)

2. "Experiments with *Trichina spiralis*," by the same. (See 'Zoological Proceedings,' vol. ix.)

February 7th, 1867.

George Bentham, Esq., President, in the Chair.

Mr. Daniel Hanbury, F.L.S., exhibited Herbarium specimens, and specimens in alcohol, illustrating the genera *Papaya* and *Jaracatia*, collected by Senhor J. Correa de Mello, at Campiñas, South Brazil.

The following Papers were read:—

1. "Notes on *Papayaceæ*;" by Joaquim Correa de Mello and

Richard Spruce, Esq. Communicated by Daniel Hanbury, Esq., F.L.S. (See 'Botanical Proceedings,' vol. x.)

2. "On Nutmeg- and other cultivation in Singapore;" by Cuthbert Collingwood, M.B., F.L.S. (See 'Botanical Proceedings,' vol. x.)

3. "Catalogue of Homopterous Insects collected by A. R. Wallace, Esq., in the Indian archipelago;" by Francis Walker, Esq., F.L.S. (See 'Zoological Proceedings,' vol. ix.)

February 21st, 1867.

George Bentham, Esq., President, in the Chair.

Mr. J. G. Baker, F.L.S., exhibited a dried specimen of *Potamogeton decipiens*, Nolte (a native of Sweden, Denmark, North Germany, &c.), gathered by Mrs. Hopkins in the canal at Bath.

The following Papers were read, viz.:—

1. "On the cultivation of *Cinchona* in the East Indies;" by John Eliot Howard, Esq., F.L.S. (See 'Botanical Proceedings, vol. x.)

2. "Additions to the Lichens of New Zealand;" by the Rev. W. A. Leighton, B.A., F.L.S. (See 'Botanical Proceedings,' vol x.)

March 7th, 1867.

George Bentham, Esq., President, in the Chair.

William Richard Winch, Esq., was elected a Fellow.

Dr. Hooker, V.P.L.S., exhibited specimens of the *Myrmecodia tuberosa*, Jack., "Nidus germinans Formicarum" of Rumphius, from

Malacca, sent by Dr. Collingwood, and now living, though in a very feeble condition, at the Royal Gardens, Kew. The stem of this plant, which is tuberous and covered with spines, is invariably filled with ant-galleries, and never known in any other condition. The galleries are lined with a coating of animal matter, of such tenacity that, as the tuber decays, the galleries may be removed entire, and resemble branching *Algæ*.

A flower and leaf of *Dalechampia Rözliana*, var. *rosea*, Müll., recently introduced from Vera Cruz by Mr. Bull, F.L.S., was exhibited by Dr. Masters, who made some observations on the structure of the flowers.

The following Papers were read, viz.:—

1. "Notes on the Structure and Fertilization of the genus *Bonatea*, with a description of a species formed at Bedford, South Africa;" by J. P. M. Weale, B.A. Communicated by Charles Darwin, Esq., F.R.S. & L.S. (See 'Botanical Proceedings,' vol. x.)

2. "List of the *Musci* collected by the Rev. Thomas Powell in the Navigators' Islands;" by William Mitten, A.L.S. (See 'Botanical Proceedings, vol. x.)

3. "Letter from Cuthbert Collingwood, M.B., F.L.S., to Frederick Currey, Esq., Sec. L.S., giving an account of a luminous *Fungus* from Labuan. (See 'Botanical Proceedings,' vol. x.)

4. A letter from Thomas Moore, Esq., F.L.S., to Frederick Currey, Esq., Sec. L.S., on living plants, exhibited by Mr. Standish, of two forms of *Skimmia*. These had been originally regarded as distinct species, and described under the names of *Skimmia oblata* and *S. fragrantissima*, but had eventually proved to be merely the two sexes of the same plant. The parent plant, *S. oblata*, had, two or three years since, borne a crop of berries, which, as no other *Skimmia* was at the time in bloom, must have been fertilized by its own pollen. At a later period *S. fragrantissima* blossomed, but the flowers proved to be absolutely male. In subsequent years the mother plant above mentioned had not borne pollen, and, in order to secure a crop of berries, required to be fertilized by some other kind; and recourse had been had to *S. fragrantissima* with full success. Thus the male plant only of *S. fragran-*

tissima, and the female (or sometimes hermaphrodite) only of *S. oblata*, were supposed to be in cultivation. The seedling plants from the self-fertilized berries above alluded to, having now blossomed, solve the mystery—males like *fragrantissima* and females like *oblata* being produced among them in about equal proportions, thus conclusively proving that the two supposed distinct species are but the two sexes of one plant, which is sometimes hermaphrodite, though it would seem to be ordinarily unisexual.

March 21st, 1867.

George Bentham, Esq., President, in the Chair.

R. J. Lechmere Guppy, Esq.; Alfred Jones, Esq.; William Stephen Mitchell, LL.B.; and Henry Cooper Rose, M.D., were elected Fellows.

The following Papers were read, viz:—

1. Letter from Dr. Kirk to Dr. Hooker, on the Branching Palms (*Hyphæne*) of the East Coast of Africa.

2. "On *Melastomaceæ*;" by M. Triana. Communicated by J. D. Hooker, M.D., V.P.L.S. &c.

3. "New Genera and Species of Neuropterous Insects; and a revision of Mr. F. Walker's British Museum Catalogue of *Neuroptera*, part ii. (1853), as far as the end of the genus *Myrmeleon*;" by Robert M'Lachlan, Esq., F.L.S. (See 'Zoological Proceedings,' vol. ix.)

April 4th, 1867.

George Bentham, Esq., President, in the Chair.

Joseph Ince, Esq., was elected a Fellow, and Mr. Ralph Tate an Associate.

Dr. Hooker, V.P.L.S., exhibited a beautiful series of photographs of the Botanic Garden, Peradenia, Ceylon; and the fruit of *Zanonia macrocarpa*, Blume, of Java; all from the Kew Museum.

The following Paper was read, viz.:—

"On the Geographical Distribution of Ferns;" by J. G. Baker, Esq., F.L.S. (See 'Transactions,' vol. xxvi. part 1.)

April 18th, 1867.

George Bentham, Esq., President, in the Chair.

Abbotts Smith, M.D., M.R.C.P.; and William Edward Williams, Jun., Esq., were elected Fellows.

The following Papers were read, viz.:—

1. "On the prevalence of *Entozoa* in the Dog, with remarks on their relation to Public Health;" by T. S. Cobbold, M.D., F.R. & L.S. (See 'Zoological Proceedings,' vol. ix.)

2. "Fungi Angolenses: a description of the Fungi collected by Dr. Friedrich Welwitsch in Angola, during the years 1855–61," part 1; by F. Welwitsch, M.D., F.L.S., and Frederick Currey, Esq., M.A., F.R.S. & L.S. (See 'Transactions,' vol. xxvi. part 1.)

May 2nd, 1867.

George Bentham, Esq., President, in the Chair.

Carl Fischer, M.D., was elected a Fellow; and Professor J. G. Agardh and Dr. Anton De Bary were elected Foreign Members.

A Letter having been read from Mrs. Boott to the President, forwarding, for the acceptance of the Society, a Portrait, in oil,

of the late Dr. Boott, V.P.L.S. (a copy from one, by Gambardella, in her own possession),—Resolved, that the Special Thanks of the Society be given to Mrs. Boott, for this very valuable and acceptable Donation.

Mr. Howard, F.L.S., exhibited a beautiful series of drawings, by Tuffen West, F.L.S., of sections of barks of *Cinchona succirubra*, Pavon, grown under the care of Mr. MacIvor, at Ootacamund, exhibiting the renewed bark after partial decortication under the application of moss. This is considered the most successful plan of cultivation, the renewed bark producing the alkaloids in large quantity. The drawings showed the structure of the bark of the first, second, and third time of renewal,—the first being less organized than the second, and the second than the third, the last also showing the presence of Spiral Ducts. Sections of the bark, exhibiting the crystals of alkaloids, were also shown, both under the microscope and in drawings by Mr. Tuffen West.

The following Papers were read, viz. :—

1. "On the genus *Crescentia*;" by John Miers, Esq., F.R.S. & L.S. (See 'Transactions,' vol. xxvi. part 1.)

2. "Note on the characters of the genus *Canna*;" by George Dickie, M.D., F.L.S. &c. (See 'Botanical Proceedings,' vol. x.)

3. "Fungi Cubenses (*Hymenomycetes*);" by the Rev. M. J. Berkeley, M.A., F.L.S. &c., and Dr. M. A. Curtis. (See 'Botanical Proceedings,' vol. x.)

4. "On a new species of *Umbilicaria*;" by the Rev. W. A. Leighton, F.L.S. (See 'Botanical Proceedings,' vol. x.)

5. "Note on the *Spiroptera sanguinolenta*, Rud., a parasite found in the heart of dogs in China," by William Baird, M.D., F.L.S.; "with an account of the occurrence of these worms at Shanghai," by J. Lamprey, M.D., H.M. 67th Reg. (See 'Zoological Proceedings,' vol. ix.)

May 24th, 1867.

Anniversary Meeting.

George Bentham, Esq., President, in the Chair.

This day, the Anniversary of the Birth of Linnæus, and the day appointed by the Charter for the Election of Council and Officers, the President opened the business of the Meeting with the following Address :—

Gentlemen,

The proceedings of our Society during the past year have varied but little from those of the preceding one; our meetings have been very fairly attended, we have had a full average number of new elections, and our finances are in a satisfactory state. Although our publications have entailed an expenditure of about £700, and £87 have been applied to the purchase and binding of books, we have had a small surplus of receipts over expenditure, enabling us to invest £200 out of the compositions received; our total capital invested amounts, therefore, now to £1600. With regard to our future prospects, our chief anxiety has been in relation to the arrangements to be made for our accommodation consequent upon our present rooms being required for the Royal Academy. Nothing on this head has as yet, I believe, been finally determined on; but plans have been prepared by Messrs. Banks and Barry, and generally approved of by the six Societies concerned, according to which our new apartments will in many respects be superior to our present ones; our meeting-room especially will be much more suited to the occasions when we have a full attendance.

In our publications, besides the usual issue of quarto Transactions and octavo Journals, the second part of our Library Catalogue has been published, containing the Transactions of Societies and Journals in progress, together with a supplement to the first part, thus completing the Catalogue of our Library up to the close of the Session of 1866. Our Transactions having attained 25 volumes, it has been thought a fit occasion for issuing a general Index. This had been long since prepared for the first 20 volumes by Mr. Bennett when Secretary to the Society, and it has now been completed for the remaining volumes, and is ready for issue to all Fellows of the Society who are entitled to the last part of the 25th volume.

In my address of 1865 I attempted a general sketch of the more important Transactions of Scientific Societies or Scientific Journals in which papers on Zoology or Botany are being published*, passing over, however, for want of time and space, those in the English language, beyond a mere mention of their titles. I have since been requested to resume the subject, so far as the North American publications are concerned; and I the more readily avail myself of this opportunity of doing so, as there are some points in regard to their proceedings on which it may be useful to institute a comparison with those of European Institutions. In this review, however, I meet with one difficulty; I have never been in America, and have no personal experience of the working of their Institutions, as I had of so many of the European ones, and am obliged to collect the data from their published reports. I trust, therefore, my friends across the Atlantic will excuse any errors I may have committed through inadvertency, or any material points I may have passed over from ignorance.

Our American colonists, before the outbreak of the war of Independence, had already begun to turn their attention to the cultivation of Science, and especially to the investigation of the rich and varied fauna and flora of their territory; and several Societies or Academies, for the promotion of these studies and the publication of Transactions on the model of European ones, were founded either immediately before the great contest or during the first years of the settlement of the States.

The American Philosophical Society, held at Philadelphia, for promoting useful knowledge, was established in 1769, and soon commenced their 4to Transactions, the 1st volume having apparently been published in 1771, although, for some reason unknown to me, it bears the date of 1789. It contains nothing bearing upon Biology, except a few practical agricultural or horticultural papers; and the publication was interrupted during the years of trouble, until the Society was reorganized in 1780. A second volume is dated 1786;

* In the above-mentioned Address, in referring (p. 14) to the Bulletin de l'Académie Impériale de St. Pétersbourg, I find that I had inadvertently omitted a first series in 6 volumes, large 4to, from 1836 to 1840, in which all the sciences were mixed,—and a second series, from 1841 to 1858, in which the 'Sciences mathématiques, physiques et naturelles' were in separate volumes from the literary matter. In the present series the whole are again mixed, but more or less of the zoological and botanical matter is separately set up in octavo, forming volumes entitled 'Mélanges Biologiques.' I have seen no copy of this work; but, from the paging of several papers detached from it, the second volume must have been completed in 1866.

and four more complete the first series, which was closed, in 1804, with the sixth volume. It contains, amongst a great variety of subjects, a few, mostly short, zoological papers, chiefly in Ichthyology, Erpetology, and Entomology, by B. H. Latrobe, B. S. Barton, and Dr. Williamson, two small contributions to American Botany sent from Europe by Thunberg and Palisot de Beauvois, and an Index Floræ Lancastriensis by Muhlenberg. The labours of the Society appear then to have been suspended for nearly fourteen years; for it is only in 1818 that we find a new series commenced and continued more or less steadily to the present time—the last received being two parts of the 13th vol., dated 1865. All are in 4to, but with gradually improving typography, paper, and illustrations, and a somewhat enlarged size adopted with the 10th vol., dated 1853. The series comprises all sciences among the subjects treated of; but a large proportion of the papers are devoted to the investigation of the Natural History (including Biology, Geology, Ethnology, and Linguistics) of the United States. J. Lea's Malacological papers are perhaps the most extensive, going through nine out of the thirteen volumes. Entomology is next in order, in the earlier volumes by T. Say and N. M. Hentz, in the later ones by J. L. Leconte, with a paper on Coleoptera by S. S. Haldeman, and another on Myriapoda by H. C. Wood, jun. In other branches of Zoology, E. Hallowell on the Reptiles of Cuba and the United States, S. F. Baird's Zoology of the Upper Missouri, and J. Leidy's papers, chiefly physiological or palæontological, are the most important, the contributions to Mammalogy, Ornithology, and Ichthyology being few and short. In Botany there are several of Nuttall's descriptions of plants collected during his various expeditions, an enumeration of no less than 3098 North American Fungi by L. D. de Schweinitz in the 4th vol., G. Engelmann's Botany of the Upper Missouri, E. Durand's Botany of the Great Salt-Lake, and a few short contributions of minor importance. In 1838 the Society also commenced publishing their Proceedings in 8vo, after the model of European Societies. Of these we have 9 vols., from 1838 to 1864, including several papers of considerable length, occasionally illustrated by plates, but chiefly on Physical Sciences, Geology, or Palæontology. In Biology there is nothing beyond a few abstracts for the purpose of securing priority of names, or short communications of very little importance.

The diminished proportion of Natural History papers in the later volumes of the Philosophical Society's publications is fully accounted for by the activity of another Society in the same city devoted exclusively to Natural Science. This Academy of Natural Sciences of

Philadelphia was established early in 1817, and immediately began the publication of the 'Journal of the Academy of Natural Sciences in Philadelphia,' in 8vo, issued in parts at irregular intervals, with a few plates. The first series of 8 vols., from 1817 to 1842, was chiefly a receptacle for short papers in almost all branches of Zoology, as well as in Geology and Mineralogy, with a very few botanical contributions by T. Nuttall, G. Elliott, L. D. de Schweinitz, and S. W. Conrad, all of little importance.

In 1841 the Academy commenced publishing their Proceedings in 8vo, at short intervals, forming 8 vols., for the years 1841 to 1856 inclusive, and since then one volume (not numbered) for each year from 1857 to 1865, the last received. They contain short communications, abstracts of the longer papers intended for the Journal, and some entire papers of greater length, with a few illustrations, woodcuts or lithographs; and in some of the earlier volumes J. Cassin's Ornithological papers are accompanied by coloured plates. In these 17 vols. will be found a valuable record of observations, and numerous descriptions of North American species, in almost every department of Zoology.

In 1847 the Academy resumed the publication of the more extended papers, in a work issued as a new series of the Journal, but in a large 4to form, with plates executed in a superior manner, many of the zoological ones coloured—corresponding, in short, to the Transactions of other Societies. The five volumes issued up to 1863, besides a few papers on exotic animals or on general subjects, contain important and valuable contributions to the zoology of the United States, amongst which may be particularly mentioned the papers in Ornithology by J. Cassin, Erpetology by E. Hallowell, Malacology and Conchyliology by J. Lea and T. A. Conrad, and Entomology by J. L. Leconte and R. Clemens, besides shorter communications in various branches of zoology by naturalists of note. Botany is limited to Nuttall's account of Gambel's plants, a paper by M. J. Berkeley and M. A. Curtis on Fungi, and E. Durand's accounts of Heermann's and of Pratten's collections.

In this Journal I observe that the date of issue of the author's copies of each separate paper is given in a note to the table of contents. This is no doubt with a view to fixing a date on which the priority of discovery or of names is to be established. It has been universally acknowledged that priority depends upon the date of publication; but it has been a much debated question what amounts to a publication so as to fix that date. Is it to be the time when a paper is read, or when it has gone through the press so as to prevent

any further alterations on the part of the author, or when it is actually given out for sale, or simply the date it bears on the title-page? I believe that at the Royal Society the date of reading a paper is considered a sufficient publication to establish rights of priority in a discovery or invention, and, in a legal point of view, with reference, for instance, to the law of patents, it seems reasonable that it should be so; for it is not fair that an inventor should obtain the sole right to his invention when the same or a similar one had been produced at the same time or before him, although not in a manner in which he could have cognizance of it; and for establishing such a fact the reading of a paper may be sufficient evidence. Both inventors can then enjoy the credit and benefit of their invention, but neither of them to the exclusion of the other. This also supposes that no alteration is allowed in a paper after it has once been read, unless it be clearly designated by brackets or otherwise, as I believe to be the practice of the Royal Society. In Biology, however, the case is different, the object is not only to establish that priority or rather independence of observation or discovery which can be enjoyed equally by two or more naturalists, but also the priority of name, which is a more complicated question, for an animal or plant cannot retain two names; when, therefore, it is found that it has been differently named by two or more naturalists, it is necessary to decide which one should be exclusively adopted. In principle, it is the universal rule among botanists, and, I believe, a general one among zoologists, that, supposing there is no absolute objection to either name, that one is to be retained which was first fixed by actual publication—its insertion in a work on sale or in general distribution, accompanied by diagnostic characters or other indications intended to fix its identity. The reading a paper at a meeting of a Society is not a sufficient publication for this purpose, only because it does not give fixity; the author himself does not feel bound by it and (possibly from the discussion evoked or observations made at the reading) may alter his names before or during the printing. A purely technical paper is, indeed, not even actually read, and often laid before the meeting in an unfinished state, the substance of it being verbally explained. The other objection, as to the impossibility of a naturalist not actually present having cognizance of a paper read at a meeting until it is in print, is only one of degree, and may even tell the other way; for he may see it in print, long before he can possibly procure a rival one from the Antipodes, although previously published.

It being admitted, then, that the date of a name is that of its

actual publication, there still remains sometimes the practical difficulty of determining when that publication took place. *Primâ facie* evidence is the date given on the titlepage of the work; but that is occasionally unfairly erroneous. The whole of Rees's Cyclopedia, in which much Zoological and Botanical matter is original, bears on the titlepages the date of 1819, while some of the volumes were published nearly 20 years earlier. Presl's Botanische Bemerkungen, with innumerable new or altered names of plants, is dated the second year before it was on sale. The Annales des Sciences Naturelles are notoriously antedated by several months. Grisebach's Monograph of Gentianeæ, dated 1839, was received in this country the previous November. The first parts of Ecklon and Zeyher's Enumeratio and of Ernst Meyer's Commentationes on South African Plants, each describing as new or renaming two or three hundred species of Leguminosæ, many of them identical in the two works, appeared almost simultaneously; but Ecklon and Zeyher's was actually published, as dated on the cover, in January 1836, whilst E. Meyer's, which was not issued to the public till the 14th of February 1836, has the ostensible date of December 1835. In order to do justice to the authors under similar circumstances, extrinsic evidence has been generally admitted to correct the date apparent on the title. In the case of Transactions of Scientific Societies this extrinsic evidence, often difficult to establish, is particularly required. There are generally two dates given—that of the reading, affixed to each paper, and that of the completion of the volume, given on the titlepage; the former would be unfair to the rival observer, who might be superseded by alterations made after the reading of the paper, the latter equally unfair to the author, whose memoir, if in the first part of the volume, may have been in the hands of the public for years before the apparent date. In some Transactions this is remedied by printing the date of publication of each separate part; but even that is not always enough, for author's separate copies have sometimes been generally circulated and even on sale a considerable time before the complete part to which they belong. It is for the purpose of fixing this date (which ought surely to be admitted as a sufficient publication) that in the Philadelphia Journal the date of issue of the author's copies is, as above mentioned, noted in the table of contents. We have been considering whether a similar plan might not be adopted for our own Transactions; but it has been thought unnecessary to make the alteration, for the cases are very few where the author's copies are ready for delivery much before the part in which they are contained; and since we have regularly issued a part every autumn, the

whole of the papers read during a session are thus actually published within a few months of the close of that session, thus always bearing the date of the same year. Where, however, as in some foreign Transactions, the author's copies are sometimes circulated a year or more before the part they are contained in is actually published, the noting the date of the former appears to be essential.

We are this moment in receipt of the 4th, 5th, and part of the 6th volume of the Proceedings of the Entomological Society of Philadelphia in large 8vo, with a few plates; edited by Mr. Scudder.

Boston was not long in following the example of Philadelphia in the foundation of a central Scientific Body. The American Academy of Arts and Sciences was established at Boston in 1780, and a few years afterwards commenced the publication of 4to Transactions, entitled 'Memoirs of the American Academy of Arts and Sciences.' A first series of four volumes, dated from 1785 to 1821, contains, however, but little on Natural History, and from that date there appears to have been a long interruption. In 1833 a new series was commenced, with improved typography and illustrations. Of this we have seven volumes, from 1833 to 1860, and the first two parts of the 8th volume, dated respectively 1861 and 1863, when, as in the case of other scientific works, the publication appears to have been suspended by the effects of the civil war. Although the majority of the papers in these Transactions are on mathematical, physical, linguistical, and other miscellaneous sciences, yet, in Natural History, they contain D. H. Storer's extended synopsis of the Fishes of the United States, as well as several detached papers of his on the Fishes of Massachusetts, Nuttall's account of the Birds of Massachusetts, some smaller contributions to insect anatomy by Haldeman and J. Leidy, and several important Botanical papers, including Sullivant's Bryology and Hepaticology of the United States, A. Gray's Plantæ Fendlerianæ, Notes on the Botany of Japan, and several minor papers, Grisebach's Plantæ Cubenses Wrightianæ, and Eaton's Filices Cubenses Wrightianæ et Panamenses Fendlerianæ.

In 1846 the Academy also commenced 8vo Proceedings, published at shorter intervals than the Memoirs, and forming six volumes, from 1846 to 1865. Besides the ordinary reports of Proceedings and abstracts of the longer Memoirs, they include some entire papers of considerable length, especially J. D. Dana's Conspectus of the Crustacea of the Exploring Expedition under Wilkes, M. J. Berkeley and M. A. Curtis's Enumeration of the Fungi of the same Expedition, Tuckermann's Synopsis of N. American Lichens, G. Engelmann's of

North American Cactaceæ, and Anderson's of West American Salices.

The naturalists of Boston further followed the example of Philadelphia in the establishment of a Society specially devoted to their own Sciences. Their first efforts, however, were not successful. A Linnean Society of New England was formed in the winter of 1814–15, and during two or three years several meetings were held, papers read, and a few collections formed; but their only publication was a Report read at a meeting of the Society on the 18th of June 1817, on the part of a Committee appointed to inquire into the facts relating to the Sea-serpents supposed to have been seen on their shores. This Report, a curiosity in its way, consists chiefly of the examination on oath of a considerable number of witnesses the result of which appears to have led the committee to conclude not only that Sea-serpents of sixty feet or more in length had really been seen, but that a *Scoliophis atlanticus* about three feet in length, actually captured and described and figured in the report, was the young of the same species. After this effort the Society languished, and was dissolved in 1822, and the remnants of the collections finally disposed of in 1830.

In that year a new Society was formed, which appears to have been yearly increasing in means and activity. The Boston Society of Natural History in 1834 commenced publishing papers communicated to them in the Boston Journal of Natural History, in 8vo, with a few plates; and the seven volumes issued up to 1863 are replete with valuable contributions to almost every branch of the Zoology of their country, with a few botanical papers, especially the Plantæ Lindheimerianæ by Engelmann and Gray. In exotic biology there also are papers by S. Cabot on the Birds of Yucatan, by J. Wyman on the Gorilla, by T. W. Harris on African Beetles, by A. A. Gould on African Shells, and by L. W. Bailey on Microscopical Organisms of Para. The Society also publish their Proceedings in 8vo, now in the 10th volume (1841 to 1866), which, besides abstracts, include a considerable number of short systematic Enumerations, Diagnoses, &c., both in Zoology and Botany. Of late years, however, the Society appears to have devoted its chief energies to the formation of a Library and Museum. The printed reports give a very flattering account of the new building into which the Library and Museum were moved in 1864, and which had been erected at a cost, including the cases, of above 100,000 dollars; the Library is reported as consisting in 1865 of above 7000 volumes, besides 1800 parts of volumes and above 2000 pamphlets, and the Museum as

being far richer in most branches of Natural History than one should have supposed that a private Society would have been able to maintain. It will be interesting to watch in future years how far the resources they can depend upon will enable them to provide for the proper care and arrangement of their collections, which, to be useful, must be constantly and largely on the increase. The Treasurer's accounts show that besides the Janitor (whom we should call Porter) and some occasional help, there is but one paid officer, an eminent Entomologist, who is at the same time Custodian, Librarian, Recording Secretary, and Entomological Curator. For the thirteen other Curators of as many branches of Natural History, on whom alone depends the arrangement of the specimens, no remuneration appears in the accounts, whereas if the anticipations of increase sketched out in the Custodian's reports be realized, there must be full claims to the whole time of more than one Curator in most of these branches. The Society is making an experiment upon a large scale, but evidently depends much upon gratuitous aid; time alone will show whether that is less precarious on the other side than on this side of the Atlantic.

It is announced that the Boston Society's Journal is to be discontinued in the present form, but that the papers read will be published in quarto, under the new title of Memoirs of the Society.

The Harvard College at Cambridge contains a Museum of Comparative Zoology, which appears to be of great importance, and we understand that the very rich and valuable Herbarium of the distinguished Professor of Botany is also secured to the Botanic Garden of the University, but we know of no regular Transactions or Journals published in connexion with the establishment.

The Lyceum of Natural History of New York was established in 1818, and commenced publishing the Annals of the Lyceum in 1823, in large 8vo, with a few plates. The seventh volume was completed in 1862, and the eighth is now in progress; they contain papers of considerable importance, chiefly in illustration of the Natural History of the States, including C. L. Bonaparte's Synopsis of North American Birds, some other papers in Ornithology by J. N. Lawrence and others, in Ichthyology by T. Gill, in Entomology by J. L. Leconte, J. W. Greene, and others, and numerous monographs and catalogues of shells by various conchyliologists. In Botany Torrey's account of Rocky Mountain plants and United States Cyperaceæ, and L. de Schweinitz on North American Carices, occupy a considerable portion of the early volumes, beyond which there are only a few short communications from A. Gray.

The Elliott Society of Natural History of Charleston, South Carolina, published a volume of Proceedings, extending from November 1853 to December 1858, in 8vo, with a few plates. The most important papers are those of J. Mac Crady on the Acalephæ of Charleston Harbour; among the smaller ones two are illustrated by plates, L. R. Gibbes on *Porcellana*, and a small list of rare plants by H. W. Ravenel.

The Academy of Science of St. Louis was established in 1856, and obtained an act of incorporation early in the following year. They publish Transactions and Proceedings in one continuous series under the former title, in 8vo, with a few plates; the first volume, a thick one, extends from 1856 to 1860, and two parts of the second are dated respectively 1863 and 1866. The papers relate chiefly to North American fossils, with a few on various physical subjects, and one on an Egyptian *Papyrus*. In Biology there is little beyond Engelmann's monograph of *Cuscuta*, and other communications by the same author, more or less connected with the North American flora.

The only scientific journal published in the United States which I have met with is that which has acquired a worldwide reputation under the title of the American Journal of Science and Arts. It was commenced under the editorship of Professor Silliman in 1818, and published in parts in 8vo. After some interruptions during the first year or two, owing to the difficulty of arranging with the publishers, it has regularly formed two volumes in each year. A first series, conducted by Professor Silliman, and after the first few years at his own risk as proprietor, was closed in 1846 with the forty-ninth volume, a fiftieth being soon after added, made up of a general Index. Professor B. Silliman was then associated with his father, who has since died, and now conducts it at Newhaven in conjunction with Prof. J. D. Dana, with the assistance of several other Professors of Cambridge and Newhaven. It is now in the forty-third volume of the second series, having undergone but little change beyond a reduction in bulk from 1864, necessitated by the difficulties resulting from the war. In this journal Biology occupies less space than other sciences; there are, however, a few valuable papers in both Zoology and Botany, and under the head of scientific intelligence, every number contains critical notices or abstracts of works and other doings in Biology, which are always of great interest on this side of the water as well as in the States.

Washington is the seat of an Institution which, although not coming precisely within the definition of a Scientific Society, contri-

butes largely to the promotion of our own, amongst other sciences, by publications after the model of Transactions of Academies, as well as by other means. It is, moreover, of a nature so different from any we have in this country, that it may not be out of place to enter into some detail as to its history, as gathered from the official reports, as well as from what we have experienced of its action. The founder was an Englishman, James Smithson, described as a graduate of the University of Oxford, who, having devoted a long life to the pursuit and encouragement of science, bequeathed his large property to the United States, in trust, to found, at Washington, an Institution which should bear his name, and have for its objects the increase and diffusion of knowledge amongst men. The greater part of the property was realized in 1838, but considerable delay occurred in its application, owing chiefly to the great difference of opinion that prevailed as to the character to be given to the Institution, the objects of which were so vaguely indicated by the testator under these two heads, the increase and the diffusion of knowledge. At length, on the 10th of August, 1846, an Act of organization was passed by Congress, and the 'Smithsonian Institution for the Increase and Diffusion of Knowledge' was established at Washington, under the management of a Board of Regents fifteen in number, consisting of the Vice-President of the United States, the Chief Justice of the Supreme Court, and the Mayor of Washington, as *ex officio* Members, three appointed by the Senate from its own body, three by the House of Representatives from its Members, and six citizens appointed by a joint resolution of both houses; several of the principal executive officers of the States to be *ex officio* Members, with occasional Honorary Members to be elected by the Regents. The total amount of the bequest received into the United States Treasury on the 1st of September, 1838, was 515,169 dollars, or above £125,000, deposited in the United States Treasury, and producing an annual income of 30,910 dollars, payment of which they have succeeded in obtaining in coin, making nearly £7000. There was also at the time of the establishment of the Institution an accumulation of interest amounting to 242,129 dollars, or nearly £55,000. For the application of these sums two different schemes were strongly advocated by opposing parties. One, which found most favour with the national and popular party, was the formation of a general Library, Museum, and Gallery of Art in a building which, by its dimensions and architectural design, should be an ornament to the city, and a splendid memorial of the liberality of the founder; whilst others, entering more into the spirit of the bequest, urged that

Smithson's object could never have been the glorification of Washington, or the localization of knowledge, but the promotion of science wherever or by whomever it was or might be pursued, and that the fund ought therefore to be employed in the encouragement of scientific and literary researches, and to the publication and transmission of their results to every quarter of the globe where civilization could reach, with such buildings, collections, and local appliances only as should be immediately subservient to these objects. At length a temporary compromise was effected between the advocates of local appliances and of active operations. It was determined that, besides the deposited capital which, by the Act, was to be left untouched, a portion of the income was at first, at least, to be annually invested, till the plans should be matured by experience, and that, of the remainder, one portion was to be expended in the formation of the library, museum, and gallery required by the Act, and the other in the more active operations recommended by men of science, whilst the accumulations already in hand were to be applied to the erection of the building, the relative proportions being left to the discretion of the Regents. During the first year the popular party found favour with the majority of them, and large sums were squandered on the building and local objects; but in time sounder views prevailed, the active operations have been extended with a success we all can appreciate, and the Institution has now attained a position of practical eminence and usefulness to science in strict conformity with the evident intention of the founder. This happy result (as far as I can judge from this distance, and without any personal communication) must be attributed mainly, if not entirely, to the well-devised plans of the Secretary, Prof. Henry, and to the zeal, activity, and perseverance with which he has devoted himself to their practical carrying out during the twenty years that have elapsed since the foundation of the Institution.

The edifice was originally to have been "a suitable one, constructed in plain and durable materials;" but the Building Commitee, giving way to local influences, adopted a plan described in the Secretary's reports as being in the Lombard style, with useless buttresses, turrets, and towers, the convenience of the interior entirely sacrificed to architectural display—a judgment which an inspection of the plans and elevations given in R. D. Owen's 'Hints on Public Architecture' fully confirms. The money thus lavished on the freestone façade absorbed so much of the sum at command that the interior had to be run up in wood, lath, and plaster. The two wings were thus completed and the main building presenting a

frontage of 200 feet was far advanced when the woodwork gave way, and had to be replaced with fireproof materials at very large extra cost, the roof alone of this main building remaining in wood. In that roof, where little danger was foreseen, a fire broke out through the carelessness of some workmen in June 1864, destroying much private property, official papers, &c., although the most valuable stores, library, and collections of the Institution were preserved. After these disasters the ruling powers appear at length to be convinced that in the work of restoration and completion they must look more to substantial durability than to architectural effect; but they are sadly hampered by the size of the building, so much beyond their real wants, and its costly style, which cannot now be altered.

In this building were to be deposited—

(1) A general National Library, with provisions by which the Institution would be encumbered by all the trashy productions of the day without means of procuring those really valuable to science; this they have succeeded in warding off, and are endeavouring to limit their library to works bearing on science. They have bestowed especial pains, and appear to be already rich in Proceedings and Transactions of learned Societies and other serials connected with science; and it is hoped that they will be gradually relieved from their general and useless literature by the transformation of the Congress Library into the great National United States Library, instead of attempting to impose the burthen on a private Institution incapable of sustaining it.

(2) A general Museum, as comprehensive and multifarious in its objects as our own British Museum, with a similar aim at popular display. But the impractibility of such a Museum, which would soon absorb an annual income equal to their whole capital, is now felt, and the collections are to be henceforth restricted—1st, to those made by the United States Exploring Expedition, the care of which has been imposed on the Institution by Congress; 2nd, a limited Museum of type specimens, principally of the products of the American Continent, or such as are thought of especial interest as illustrating the Smithsonian publications; and 3rd, collections for distribution, to which I shall presently revert.

(3) A Gallery of Art; but the absurdity of imposing on such an Institution the care and maintenance of a National Gallery is so evident, that the collections in this respect have been limited to some plaister casts of distinguished individuals, and a very few pictures they could not refuse the charge of.

In the active operations of the Institution the knowledge they

are called upon to promote has been divided, as in the great Academies of the Continent of Europe, into the three great branches of Physical Science, Moral and Political Science, and Literature; the Fine Arts being nominally included in the latter class, but really somewhat extrinsic in character, and practically passed over. What has been effected by the Institution in the second and third classes, it is beyond my province to inquire; and even in the Physical class I do not venture to express any opinion on their efforts in the promotion of Meteorological, Astronomical, and other Physical observations. In Biology their exertions have been directed to the publications of Memoirs, Reports, and other papers, to the promotion of Exploring Expeditions, as well as of local investigations, to the distribution of specimens, and to the facilitating the interchange of publications and other vehicles of knowledge.

The principal publications of the Institution are in two series, the one in 4to, the other in 8vo, corresponding generally to the Transactions and Journals of Scientific Societies. The 4to series, entitled 'Smithsonian Contributions to Knowledge,' copiously illustrated by well-executed plates, has now attained its 15th volume (although 14 only have as yet reached us), the first having been published in 1847, less than a twelvemonth after the foundation of the Institution; the 8vo series was only commenced in 1862 without plates, and now forms six large volumes. In these two series Physical Sciences and Natural History (Biology, Palæontology, and Geology) occupy nearly equal proportions; there are also extended ethnological and philological Memoirs, and a few smaller ones on miscellaneous subjects. The Biological papers, whether systematic or physiological, are almost entirely illustrative of the fauna and flora of North America, the most important of which are (including two or three now in the press) Monographs or Catalogues of North American Bats by H. Allen; Mammals and Birds by S. F. Baird; Oology by T. M. Brewer; Reptiles by S. F. Baird and C. Girard; Cottoid Fish by C. Girard; Marine Invertebrata and Crustacea by W. Stimpson; Shells by W. G. Binney, P. P. Carpenter, T. Prime, W. Stimpson, and G. W. Tryon; Insects by J. L. Leconte, H. Hagen, H. Loew, F. E. Melsheimer, J. G. Morris, R. Osten Sacken, H. de Saussure, S. H. Scudder, and P. R. Uhler; in Animal Physiology by J. Dean, J. Jones, S. W. Mitchell, G. R. Morehouse, and J. Wyman; in Insect Embryology by L. Agassiz, and in Microscopic Biology by J. W. Bailey and J. Leidy. In Botany we have W. H. Harvey's Nereis Boreali-Americana, illustrated by 50 plates, A. Gray's Plantæ Wrightianæ Texano-Neo-

Mexicanæ, and three papers by J. Torrey on Californian plants. Each one of these papers is separately paged in order to facilitate their separate distribution.

The Smithsonian reports form a volume in 8vo for each year; they contain, besides the official reports of the proceedings of the Institution for the preceding year, extracts from correspondence, reports of Explorations, &c., several important scientific papers translated from foreign languages, and some original ones on various scientific subjects. These reports to Congress are printed at the expense of Government, with the exception of a few occasional woodcuts supplied by the Institution.

In the way of promoting Explorations and collection of observations, the efforts of the Institution have hitherto been judiciously confined as strictly as possible to America, Northern and Arctic, Central and Southern; but in this field they have done much, and the exertions of the Institution, with considerable means at its command, cannot but remind one of the equally strenuous and successful exertions, as to one branch at least of science, of a single individual in our own country, the late Sir William Hooker, or of the more general ones of our Royal Geographical Society. On this subject I cannot do better than quote a passage from the Secretary's Report of March 1865, when speaking of the aid afforded in the organization of government explorations by land and by sea:—

"Whether by official representations to the heads of departments or personal influence with officers and employés, it has secured the engagement of individuals competent to collect facts and specimens; it has instructed persons thus engaged and others in the details of observation, it has superintended the preparation and in some cases borne the expense of the necessary outfits, has furnished fresh supplies from time to time to the collectors while in the field; received the collections made and preserved them for future study, or at once consigned them to proper persons, both at home and abroad, for investigation, directing the execution of the necessary drawings and engravings for the reports, and finally superintending the printing and even the distribution of any available copies of the completed works to Institutions of science. Prior to the establishment of the Institution but little had been done by the Government in the way of scientific explorations, with the exception of that under Captain Wilkes. But since then, nearly every United States expedition, whether a survey for a Pacific Railroad route, a boundary line, or a wagon route across the Rocky Mountains, or an ordinary topographical expedition, has been influenced or aided more or less

as above stated. Besides these, similar explorations have been carried on without any reference to Government, and either entirely or in a great measure at the expense of the Institution and always at its suggestion." An enumeration follows of above twenty of the more important of these Expeditions directly organized by the Institution in the northern and western portions of North America, in Mexico, Central America, Cuba, Jamaica, and Bolivia.

In making collections by means of these expeditions or otherwise, the object has not been so much to supply a large museum with permanent specimens or duplicates for regular exchanges as to distribute the specimens where it is thought they might best advance the cause of science, by being most accessible to the largest number of students engaged in original investigations. Much has been done in this way in the encouragement of local societies in rural districts for the collection of specimens and the recording of natural phenomena; and, as far as botany at least is concerned, the collections that come to Europe show that the official statements on this head are not extravagant boasts.

I have said that in its Library the Institution is endeavouring to obtain a complete collection of Transactions and other works of a serial character issued by learned bodies. This they expect to obtain chiefly by a liberal system of exchange, and for that purpose it is now in correspondence with upwards of 1200 of the Societies, Public Libraries, and principal Universities of the Old World.

The last head I shall refer to is that of International Exchanges. From the first, one of the special objects of the Secretary's plans was to facilitate the direct correspondence between the learned institutions and scientific men of the two worlds, and the free exchange of their publications. Year by year the plans for this purpose have been modified and improved until they have attained an extent which seems only to require control to guard against its being abused by private interests under the name of science, or, perhaps still more, of benevolence. At the present time the Institution receives, at periods made known through its circulars, any books or pamphlets of scientific, literary, or benevolent character which any institutions or individuals in America may wish to present to a correspondent elsewhere, subject only to the condition of being delivered in Washington free of cost, and being accompanied by a separate list of the parcels sent. Where any party has any special works to distribute, the Institution is prepared to furnish lists of societies or persons to whom they might be usefully sent. The articles and volumes, when received, are assorted, packed, and dispatched to the

agents of the Institution in London, Leipzig, Paris, and Amsterdam. The boxes are there unpacked, and the contents distributed through the proper channels. The returns for these transmissions are received by the same agents, packed and forwarded to Washington, from which point the parcels for other parties are sent to their proper destination. All the expenses of packing, agents, freights, &c. between those four towns and Washington are borne by the Institution, the parties concerned only paying the local carriage from or to these great centres. In this interchange the Institution has obtained special facilities on the part of custom-houses, railroad and steamboat companies; and the scientific and literary world have largely availed themselves of this useful system. The number of packages reported as dispatched to foreign countries from Washington in 1864 was 1011, contained in 63 boxes, weighing 20,500 lb., whilst the packages received in return was 2482, exclusive of those for the Smithsonian library.

We have nothing of the kind in this country, and the difficulties of interchange of books and specimens with the Continent are much felt; the comparative cheapness of freights is more than made up by the complicated agencies and other extra charges, which can scarcely be avoided even by the few who are initiated into the secrets of the business. A box of specimens for Hamburg, which the carrier took to the wrong continental steamboat agent in the city, cost me 22*s*., when for 25*s*. I might have gone myself to Hamburg and taken the box with me as luggage. The sending one or two volumes, or a small packet of specimens into Germany, is often prevented by the difficulties and expense attending it. It is not to be expected that any Association in this country should be endowed with funds especially devoted to the diffusion of knowledge, enabling them to undertake the transmission gratis of scientific works and specimens; but it appears to me that if, for instance, the six Scientific Societies which are in future to be assembled in this locality were to join in salarying agents in London and in three or four of the principal centres of science on the Continent, who should receive for trasmission, pack, and periodically despatch scientific parcels and distribute return packages, charging to individuals their proportions only of actual disbursements, the gain to science would be considerable and the charge to each Society but small.

In glancing over the general tendency of the biological papers contained in the works I have enumerated, it will be seen that, although it is scarcely half a century since our American brethren applied themselves in earnest to the investigation of the natural

productions and physical condition of their vast continent, their progress, especially during the latter half of that period, had been very rapid until the outbreak of the recent war, so deplorable in its effects in the interests of science as well as on the material prosperity of their country. That is, however, now fortunately over; and although the means of every scientific institution are still sadly crippled by the high prices and heavy duties resulting from that war, yet many of them appear to be resuming their former activity; and it is to be hoped that they will now again receive every encouragement, public and private, in the vigorous prosecution of their researches. The peculiar condition of the North American Continent requires imperatively that its physical and biological statistics should be accurately collected and authentically recorded, and that this should be speedily done. It is more than any country, except our Australian colonies, in a state of transition. Vast tracts of land are still in what may be called almost a primitive state, unmodified by the effects of civilization, uninhabited, or tenanted only by the remnants of ancient tribes, whose unsettled life never exercised much influence over the natural productions of the country. But this state of things is rapidly passing away; the invasion and steady progress of a civilized population, whilst changing generally the face of nature, is obliterating many of the evidences of a former state of things. It may be true that the call for recording the traces of previous conditions may be particularly strong in Ethnology and Archæology; but in our own branches of the science, the observations and consequent theories of Darwin having called special attention to the history of species, it becomes particularly important that accurate biological statistics should be obtained for future comparison in those countries where the circumstances influencing those conditions are the most rapidly changing. The larger races of wild animals are dwindling down, like the aboriginal inhabitants, under the deadly influence of civilized man. Myriads of the lower orders of animal life, as well as of plants, disappear with the destruction of forests, the drainage of swamps, and the gradual spread of cultivation, and their places are occupied by foreign invaders. Other races, no doubt, without actually disappearing, undergo a gradual change under the new order of things, which, if perceptible only in the course of successive generations, require so much the more for future proof an accurate record of their state in the still unsettled condition of the country. In the Old World almost every attempt to compare the present state of vegetation or animal life with that which existed in uncivilized times is in a great measure frustrated

by the absolute want of evidence as to that former state; but in North America the change is going forward as it were close under the eye of the observer. This consideration may one day give great value to the reports of the naturalists sent by the Government, as we have seen, at the instigation of the Smithsonian Institution and other promoters of science, to accompany the surveys of new territories. For present purposes we want very much a digest of the new observations. Synopsis of some classes of insects and other animals appear indeed in a complete, or nearly complete, form in the Smithsonian and other publications above mentioned; but we have as yet no complete flora of North America. The admirable one began so many years since by Torrey and Gray has been so long interrupted that it requries rewriting from the beginning; and there is no greater service to the science that the distinguished Cambridge Professor could now render than the resumption of that work, in any, however much abridged, form.

The American Museum reports suggest some topics worthy of consideration with regard to the general question of Natural History Collections. The first thing that strikes one is the want of a National Central Museum for the reception of as complete a representation as can be obtained of the North American Fauna and Flora, with so much at least of foreign specimens as may be required for comparison and generalization. For this they seem to have depended on the efforts of private scientific bodies; but the progress of these, so far as they have gone, seems to corroborate the experience of the Old World, that the useful maintenance of such an establishment is absolutely hopeless unless it be supported at the public expense, or by the annual proceeds of a sufficiently large inalienable capital. In America, as in Europe, almost every Natural History Society, small or large, begins by contemplating the formation of a Museum, undefined as to limits; contributions are invited and donations thankfully received from every quarter, without reference to value or practical utility. At first, whilst the Librarian, Secretary, or other manager takes a personal interest in the arrangement and exhibition of the objects received, when donors can bring their friends to see their contributions displayed on shelves or in glass cases with their own names paraded on the cards, when most of the members of the Society have the new feeling of a personal share in the ownership of the collections, when the number of specimens received is blazoned forth in annual reports as a matter of pride and gratification, these incipient Museums may have considerable influence in stimulating collectors and observers of nature. But after a

time these collections outgrow the Society's means, the specimens which may be required for study or comparison are encumbered by a mass of trash presented by persons who do not know what else to do with it, or who have attached a false value to the fruits of their own labours, the permanent officer can no longer have time to select for exhibition what is worthy of it, nor to arrange those which might be available for reference, and the Society cannot afford to maintain the necessary staff of keepers, even if they have a building large enough for the purpose. Packages and specimens are, however, still received, exhibited at meetings to elicit formal thanks, and then consigned to oblivion and decay in cupboards and garrets, the members generally taking no further interest in what they can make no use of. If afterwards attention is called to this state of things, it may be felt that something must be done; the gratuitous aid of patriotic members is called in, and the museum may be more or less purged of trash and partially arranged. But gratuitous aid, like voluntary subscriptions, is generally given on the spur of the moment, and can never be depended on for long-continued and ever-increasing demands; the collections relapse into a condition worse than the previous one, till at last the Society is obliged to dispose of them as a clog on, instead of an aid to, their operations. Such is the history of many a museum I could name on the Continent and at home, including our own, and such seems destined to be the career, on a large scale, of the Boston Society, notwithstanding its large invested funds, if something is not done to give it a permanent independence of individual disinterested efforts. It is now in the gratuitous aid period; but when its present stores are doubled or quadrupled, when the thirteen or fourteen unpaid curators must not only give their whole time to it, but require each of them one or more assistants to do the work usefully, it will not be done at all; and unless the Society receives that extensive support which can only be expected from the State stowage, neglect and destruction must ensue. It is no doubt considerations such as these that have induced the Smithsonian Institution to repudiate the burthen attempted to be imposed on them of a National Museum, which even the whole of their income would be insufficient to maintain.

There is another class of Museums which the Smithsonian Institution appears to be promoting and assisting, with what results I have not sufficient means of judging; these are local Museums on a smaller scale in the smaller cities and provincial towns. We have many such in Europe both on the Continent and in our own country, and if judiciously formed and adequately maintained, ought to be

very usefnl in encouraging the taste for observation at home, and giving the scientific visitor from a distance authentic information on the natural history of the district. But too many of them depend on the fluctuating support of voluntary contributions, and follow the fate of Museums of Societies. I have had occasion to go over many of these local Museums in various parts of the Continent and some of our own, and it had been my intention to have collected information, and in one of my addresses to have prefaced some general observations on the subject, with a detailed review of all our provincial Natural History Museums and Associations; but so many of them are unfortunately more or less in a state of collapse or uselessness, that I feared that special notes might be invidious. I may perhaps be allowed, however, generally to remark, that it appears to me that local provincial societies cannot better apply their funds and influence than in the establishment, on a permanent and independent footing, of a public Museum confining their publications to matters of purely local interest, which the general naturalist is not to be called upon to notice; that this Museum should aim at completeness in representing the local district, that exotic specimens should be restricted to such a limited number of representative types or specimens for comparison as their means will afford, selected solely in proportion to their utility in the Museum, without reference to the individuality of the donor, or, if a certain number of complementary specimens must be retained for a time in order to keep up the public interest in the establishment, such specimens be unhesitatingly expelled as soon as the cause for retaining them is gone.

In conclusion, I may perhaps be excused in alluding to some general principles in the management of large Museums, which are inculcated by the Smithsonian Institution, more or less followed on the Continent, formerly almost ignored with us, but now more generally recognized. These are liberality of exchanges, facilities for study, and rejection of trash, principles which it may be hoped are even gaining upon that most essentially conservative establishment, our gigantic and, I might almost add, all-grasping British Museum. The large sums annually voted for its support by the Nation justify, indeed, not only the exhibition on a most extensive scale of attractive specimens for the occasional instruction or excitement to observation they may give to the general public, but also the concession to the popular party of a raree show for the thousands of gazers who would otherwise congregate for less harmless amusements; but a large proportion of the support or contributions to the Museum is granted or given in the name of Science, and Science has a right to its full

share in the consequent benefit. Whether Natural History be or not under the same roof as Art, Literature, and Archæology, Science has a claim upon Parliament to provide buildings and maintain a staff adequate to the scientific arrangement of the collections; and she has, I think, also a right to call on the management, be they a composite Board of Trustees or individual responsible Heads, to reserve days, accommodation, and specimens for examination and study, to allow of the requisite appliances of light and heat in the process, to cause the stores that have accumulated for more than half a century to be turned out of their hidden repositories, to have what is useful to scientific researches rendered accessible for the purpose, the surplus duplicates employed in a liberal system of exchanges, with an eye quite as much directed to the distributing them usefully as to the pecuniary value of any expected return, and to authorize the consigning to the dust-cart all absolute rubbish occupying valuable space.

OBITUARY NOTICES.

The Secretary read the following notices of deceased *Fellows*.

Thomas Ansell, M.D., was elected into the Society in the year 1838, and died on the 24th of July 1866, in his 68th year. He was for many years in extensive practice in the eastern part of London, but nevertheless found time for scientific pursuits. He was well versed in the use of the microscope, and was one of the earlier Members of the Royal Microscopical Society. As Chairman of the Court of Examiners of the Apothecaries' Company he occupied an important post as regards the medical profession, and was distinguished by the able and conscientious manner in which he discharged the duties of his responsible office.

J. Tricker Conquest, M.D., was Physician for a very long period to the London Lying-in Hospital and to several other medical charities, and was formerly Lecturer on Midwifery at St. Bartholomew's Hospital. He was elected into this Society in 1819, and died on the 28th of October 1866, at the age of 77.

Dr. Conquest, though never, so far as I am aware, a contributor directly to natural science, in his own branch of the medical profession enjoyed, during the whole of a long career, a very eminent reputation. His principal published work is entitled "Outlines of Midwifery," which was at one time held in high estimation by

the profession, and more especially by medical students. Besides his professional reputation, Dr. Conquest was well known and universally and most deservedly esteemed for his kind and philanthropic disposition and earnest piety.

Alexander Gibson, M.D., was born at Lawrence Kirk, Kincardineshire, on 24th of October 1800, and died on the 16th of January 1867.

After taking his Medical Degree in Edinburgh, he obtained the appointment of Assistant-Surgeon in the East-India Company's Service in January 1825, in which year he proceeded to India, and served at first for a few years in the Indian Navy. Whilst thus employed, he applied himself to the study of the native languages, and passed Examinations in Hindoostanee, Mahrattee, and Gujerattee. In 1836 he was appointed Vaccinator for the Deccan and Candeish, and whilst engaged in this migratory office, his knowledge of Botany and Agriculture became so fully developed as to gain him, in 1838, an appointment as Superintendant of the Botanical Gardens of Dapooree. Here Dr. Gibson paid particular attention to the introduction and cultivation of foreign trees and plants; and the success that attended his efforts to produce several drugs for the use of the Medical Department received especial commendation from the Court of Directors.

In 1847 he was appointed to the more important Office of Conservator of Forests in the Bombay Presidency, in which capacity he was for fourteen years the right hand of the Government in all matters connected with his department. His valuable Reports, well known to many of the Fellows of this Society, were collected and published in several volumes by the Government; and at the termination of his service, in 1860, he received a public acknowledgment from the Governor in Council of his "unremitting zeal in the discharge of his office," and "of the beneficial results which the measures conducted under his direction have secured to the state,"—an acknowledgment which was fully confirmed by Sir Charles Wood, in a despatch to the Bombay Government, dated March 2, 1861.

Amongst other qualifications for a post such as that occupied by Dr. Gibson, which demands constant exposure to the climate and its malarious influence, he possessed an iron constitution, which enabled him to penetrate and live in jungles that would have killed most Europeans.

Giovanni Gussone.—This illustrious Neapolitan botanist died

on the 14th of January 1866, in his 80th year. He was born in the town of Villamaina, on the 8th of February 1787, and at an early age began the study of Medicine at Naples, attending the classes of Cotugno (the well-known anatomist), of Lementini and of Andria. His botanical studies were pursued under the instructions of Petagna and Tenore. In these latter studies he soon took a distinguished position among his fellow pupils, and he was, in consequence, selected by those Professors to assist them in their great work the 'Flora Neapolitana.' He also aided in the management of the Royal Botanical Gardens at Naples, at that time the most extensive in Italy.

In this capacity Gussone continued to act with great zeal till 1817. About this date his merits had become so marked that he was appointed Director of a new Garden, established at Bocca di Falco, near Palermo, whose high reputation he very soon established.

Whilst in this post he was enabled, by the liberal assistance of the Government, to visit all parts of Sicily and the adjacent small islands, of the vascular plants of which parts he eventually drew up a complete account. In these explorations he was fortunate enough to secure the assistance of Gasparrini, who, on Gussone's recall to Naples as Superintendent of the Royal Domains, succeeded him as head of the Botanic Gardens at Bocca di Falco in 1827.

The principal works of this learned botanist, all of which are held in high estimation, are:—

1. Plantæ rariores quas in itinere per oras Ionii ac Adriatici Maris, et per regiones Samnii ac Aprutii, collegit. 1826.

2. Floræ Siculæ Prodromus. 1827–28.

3. Supplementum ad Floræ Siculæ Prodromum, quod et specimen Floræ Insularum Siciliæ ulteriori adjacentium. 1832.

4. Floræ Siculæ Synopsis. 1842–44.

5. Enumeratio Plantarum Vascularium in Insula Inarime sponte provenientium vel œconomico usu passim cultarum. 1854.

Besides these works, Professor Gussone has left a very extensive Herbarium in perfect order, containing about twenty thousand species, now belonging to the Royal University of Naples. And in the same apartments are also lodged the valuable documents relating to his various tours, amongst which should more particularly be mentioned that which he took in 1830 to this country, Spain, France, Switzerland, and Germany. His main object in visiting England was, I understand, to enable him to consult and compare the plants in the Linnean Herbarium.

Edward Hawkins, Esq., F.S.A., for upwards of twenty years Keeper of the Department of Antiquities in the British Museum, died on the 23rd of May 1867, in his 88th year. Though better known as a most distinguished Antiquary, Mr. Hawkins, in his younger days, was much attached to the study of Natural History. He became a Fellow of this Society in 1806.

Joseph Henderson, an Associate of the Society, died on the 22nd of November 1866, at Wentworth Wood house, where he had terminated, in 1863, a service of nearly fifty years under the late and present Earl Fitzwilliam. He was a man of high tone of mind, and had acquired a surprising amount of knowledge on various subjects, notwithstanding the necessarily almost constant occupation of his time. He had a fair knowledge of Latin and French, and was an admirable draftsman. He was an excellent botanist and a good ornithologist and entomologist. In botany he made the minute structure of Cryptogams an especial subject of study; and he was one of the first to discover the *antheridia* of Ferns, though he failed to recognize their real nature. A paper "On the Germination of Ferns," published in the Magazine of Botany and Zoology, in 1837, made him generally known amongst botanists; and this and other researches, some of which "On the Reproductive Organs of *Equisetum*," were printed in the 18th volume of the Linnean Transactions, procured him the well-deserved honour of being elected an Associate. His especial predilection for the study of Ferns led him to take advantage of the position he occupied at Milton and Wentworth, to make one of the most important collections of living specimens in the country. In all his scientific pursuits he was happily encouraged by his noble employers.

Alexander Philip Maximilian, Prince of Neuwied, was born at Neuwied, on the Rhine, on the 23rd of September 1782.

In early life he served in the Prussian Army, which he quitted in 1806, in order to devote himself ardently to the study of the natural sciences. In 1815 he sailed for Rio de Janeiro, with the intention of exploring the interior of Brazil. In company with Freyreiss and Sellow, and numerous attendants, he reached San Salvador, after traversing vast tracts of desert country; and in the following year (1816) penetrated as far as Morro d'Arrara. Here he encountered the tribe of the Botacoada Indians, of whom he was the first to furnish any exact account. In consequence of the war then raging among the various savage tribes, he was, however, compelled to abandon his intended route, and to make

his way to Villa Vicosa. He afterwards visited successively Caravalles, Santa Cruz, and Villa Belmonte, and remained for some time in the neighbourhood of the extensive mines at Jouassema, which were discovered by him. He afterwards, with much difficulty, cut his way through the immense forests on the North of the Rio Belmonte, and at length reached the province of Minas Gerães. Prevented by his impaired health from extending his journey beyond this point, he traversed Sertam and the province of Bahia to Nazareth, where, having been mistaken for an Englishman, he was arrested and detained three days in custody, and robbed of many of the precious insects and plants collected in his long and painful journey. Disgusted by this vexatious incident, he abandoned his original intention of visiting other parts of the empire, and embarked for Europe on the 10th of May 1817.

In 1833, however, he returned to the New World, and traversed the extreme west of North America, advancing as far as the Rocky Mountains, and returned home with a rich harvest of objects of Natural History, together with numerous views taken by the artists who accompanied him.

His principal published works are:—

1. Reise nach Brasilien in den Jahren 1815–17 (2 vols. 8vo., with an Atlas in folio), an admirably executed work, abounding in valuable information on the east coast of Brazil, from the 30th to the 23rd degree of latitude.

2. Abbildungen zur Naturgeschichte Brasiliens (Weimar, 1823–31. 15 livr.).

3. Beiträge zur Naturgeschichte Brasiliens. (Ibid., 1824–33. —4 vols.).

4. Reise durch Nordamerika (Coblenz, 1838–43. 2 vols. 4to; with an Atlas of plates). This magnificent work is especially important in reference to the ethnography of the country.

At his summer residence of "Mon Repos," about two leagues from Neuwied, he appears to have constructed an aviary, and a museum, which, as might be supposed, contained a valuable collection of natural-history specimens from Brazil; while the palace at Neuwied boasts of a very interesting museum of Roman antiquities, discovered in the environs.

The Prince of Neuwied was elected a Foreign Member of this Society in May 1841.

He died on the 3rd of February in the present year, in the 85th year of his age. A genus of *Apostasieæ* (*Neuwiedia*) was named after him by Blume.

Henry Powell, M.D. Oxon., was Professor of Physic at Gresham College, and late Senior Physician to the Coventry Hospital, and formerly held the post of Physician to the Tunbridge Wells Dispensary and Infirmary. He was admitted into the Society in the year 1866, and died on the 18th of May 1867.

Diedrich Franz Leonhard von Schlechtendal, M., Chir. et Philos. D., Botanices Professor Publicus Ordinarius, Horti Botanici Præfectus, &c. &c., was born at Santen in the Grand Duchy of Cleve on the 27th of November 1794, and died on the 12th of October 1866, of inflammation of the lungs.

He was an excellent systematic botanist, and the author of numerous articles in the two journals which he edited for so many years, especially on the Plants of Mexico collected by Schiede and Deppe, and on those of South America collected by Sello, and, in conjunction with his friend Ad. v. Chamisso, on the collections made during the Romanzovian voyage. While at Berlin he published a Flora Berolinensis in two vols. 8vo, 1823–24; and afterwards, when he became Professor in the University of Halle and Director of the Botanic Garden, he commenced an illustrated 'Hortus Halensis,' which, however, never reached beyond a few numbers. He edited the 'Linnæa' from its commencement (in 1826) till his death, and, jointly with Professor von Mohl, the 'Botanische Zeitung,' also from its commencement (in 1843). Few men in Germany had a more extended knowledge of plants, or have contributed more to the progress of Botanical Science, whether by his own numerous publications, or by means of the two valuable journals of which he was so long the able and indefatigable editor. He also constantly applied the resources of the gardens under his charge to close observations in systematic botany, the results of which were from time to time published in his journals.

Prideaux John Selby, Esq., M.A., a Magistrate and Deputy-Lieutenant, and formerly (1821) High Sheriff of Northumberland, of Twizell House, in that county, and Ightham Moat, Kent, was born in 1789, the eldest son of George Selby, Esq. He was educated at the Grammar School of Durham under Dr. Britton, and afterwards at University College, Oxford. He died on the 27th of March 1867.

Mr. Selby was well and extensively known as a distinguished naturalist, his name being familiar to all British naturalists as the author of several excellent works.

His love for Natural History developed itself at an early age.

His college vacations were mostly spent in long walking expeditions with one or two intimate friends through the wilder parts of Scotland, chiefly with the view of observing the habits and of collecting specimens of sea- and land-birds in their natural haunts. In 1825 he made a tour in Holland, where he purchased several rare specimens in Ornithology; and he subsequently again made several excursions in Scotland, the results of which were communicated, in a paper on "Mammalia and Birds," read before the Wernerian Society of Edinburgh in 1835, and afterwards published in 'Jameson's Journal' (vol. xx.). Mr. Selby's passion for the pursuit of all branches of Natural History brought him frequently into contact with nearly all his eminent contemporaries; and he was for many years a prominent and active Member of the Berwickshire Naturalists' Field Club.

Mr. Selby, besides scattered papers in periodicals, has left several works which will perpetuate his name as an eminent British naturalist.

His first work on Natural History, which was, however, never printed, but is still preserved in MS., is on Birds, illustrated with water-colour drawings from specimens in his own collection—the description of each, including the Linnean name, length, and colour, &c., and the nature of the nest, eggs, and food.

But he published a work in two volumes upon "British Birds," illustrated by coloured folio plates, which continued to be the standard book of reference until the appearance of the late Mr. Yarrell's volumes on the same subject.

He was also the author of a work of considerable merit on British Forest-Trees, one of Mr. Van Voorst's excellent series. It contains numerous interesting entomological observations.

He, moreover, contributed the volume on "Pigeons," to the Naturalists' Library, edited by his friend Sir W. Jardine. His name is also associated with that of the same eminent naturalist as joint editor of three volumes of "Illustrations of Ornithology," in which numerous species of Birds from all parts of the world are figured for the first time.

Joseph Skey, M.D., late Physician to the Forces, and Inspector General in the Army Medical Service, died on the 18th of September 1866, in the 94th year of his age, having been a Fellow of this Society since the year 1812.

George Ure Skinner, Esq., who was only elected a Fellow of this Society on the 6th of December last, died on the 9th of January in the present year.

He was the second son of the Very Rev. John Skinner, M.A., Dean of Dunkeld and Dunblane, and was born on the 18th of March 1804.

Mr. Skinner commenced life as a banker's clerk, and afterwards embarked in the general business of a merchant at Leeds, and in 1831 proceeded to Guatemala, where he entered into partnership with Mr. M'Klee.

Mr. Skinner had not resided long in his adopted country when he became deeply impressed with its vast resources, nearly all of which, in its then unsettled state, were allowed to run to waste. He it was who first set on foot the extensive cultivation of indigo and cochineal, which are now among the staple exports of the republic.

From a child he was an ardent lover of Nature; but this feature of his character had small chance of developing itself in a city bank or a Leeds warehouse, and it was not until he landed in the New World that it showed itself in all its strength. Guatemala was at that time an unwrought mine in natural history, its fauna and flora being alike unknown; whatever, therefore, was sent to Europe was almost sure to be new. Mr. Skinner took to shooting the birds and catching the insects of his adopted country before he meddled with the plants, to the collecting of which he afterwards more particularly devoted himself, at the instigation of his friend James Bateman, Esq., one of the earliest and most ardent collectors of Orchids. On receipt of a letter from that gentleman, Mr. Skinner "by a sort of instinct," as Mr. Bateman says, "though no botanist, at once recognized the Orchids, of which he was now told for the first time, and in which Guatemala proved to be unusually rich. He set about collecting at once, and sent by the first opportunity a box of plants most carefully packed, and which came to hand in the best possible condition. Though gathered at random, every plant was new! Among them were strange-looking masses of the now well-known *Barkeria Skinneri*, divers *Epidendra* (*E. aromaticum*, *E. aurantiacum*, &c.), *Oncidium Cavendishianum* and *O. leucochilum*, and, though last not least, *Odontoglossum Bictonense*, the first member of that now popular genus that ever reached England alive."

It would be impossible to enumerate all the new species of Orchids thus collected and forwarded by Mr. Skinner; but Mr. Bateman specially mentions the following as a few of the most remarkable:—*Odontoglossum grande* (his own particular pet), *O. Uro-Skinneri*, *O. rubescens*, and *O. pulchellum* (with its small

though lovely and deliciously-scented white flowers). The Cow's-horn Orchis (*Schomburgkia tibicinis*), *Epidendrum Stamfordianum*, and *E. alatum* were all detected in the Gulf of Dolce, while not far from the same coast the charming *Cattleya Skinneri* was discovered. Here, likewise, he met with various Stanhopeas, of which *S. saccata* was not the least remarkable. To the genus *Cycnoches* he added *C. ventricosum* and *C. Egertonianum*, the latter notorious even among Orchids for its extraordinary metamorphoses. The noble *Lælia superbiens* and the stately *Epidendrum cnemidophorum* (his latest discovery) were met with at much greater elevations, as was likewise the invaluable *Lycaste Skinneri*, which now enjoys, and, indeed, richly merits, a popularity that is ever on the increase. Besides the above, he added to our catalogues about fifty species of less note. He was also the first to introduce, if not strictly to discover (for Humboldt and Karwinski had here anticipated him) *Oncidium ornithorhynchum*.

Ornithologists, also, are nearly as much indebted to Mr. Skinner as botanists, inasmuch as, by his exertions, at least twenty new species have been added to the list of South American Birds. Amongst those first sent by him, may be mentioned the Mountain-Curassow (*Oreophasis Derbianus*), the Honduras Turkey, and the marvellous Quesal (*Trogon refulgens*, Gould).

On his return to this country, Mr. Skinner continued to take the utmost interest, more especially in Orchidology, and was of great service to the numerous cultivators of that interesting class of plants, to whom his willing aid was always rendered. Having resolved, when past 60, to retire from business, Mr. Skinner sailed on the 2nd of December for Guatemala, with the intention of winding up his affairs, and of returning to England to enjoy in repose the fruits of his well-spent life. But this thirty-ninth voyage across the Atlantic was doomed to be the last. He reached Colon or Aspinwall in good health, but was there attacked with yellow fever, and, after two or three days' illness, died on the date above given.

The Secretary also announced that twenty-nine Fellows, two Foreign Members, and one Associate had been elected since the last Anniversary.

At the Election which subsequently took place, George Bentham, Esq., was reelected President; William Wilson Saunders, Esq., Treasurer; and George Busk, Esq., and Frederick Currey, Esq., Secretaries. The following five Fellows were elected into the Council, in the room of others going out, viz.:—Sir Charles Bunbury, Bart.; Robert MacLachlan, Esq.; John Miers, Esq., St. George Jackson Mivart, Esq.; and S. J. A. Salter, M.B.

Dr. Alexander Prior, on the part of the Auditors of the Treasurer's Accounts, read the Balance Sheet, by which it appeared that the total Receipts during the past year, including a Balance of £419 2*s.* 5*d.* carried from the preceding year, amounted to £1845 14*s.*, and that the total Expenditure during the same period (including the purchase of a Great Indian Peninsula Railway Debenture for £200) amounted to £1433 4*s.* 10*d.*, leaving a Balance in the hands of the Bankers of £412 9*s.* 2*d.*

June 6th, 1867.

George Bentham, Esq., President, in the Chair.

The President nominated J. J. Bennett, Esq., J. D. Hooker, M.D., Sir John Lubbock, Bart., and W. W. Saunders, Esq., Vice-Presidents for the ensuing year.

T. C. Allbutt, M.B., John Colebrook, Esq., Dr. Charles Meller, and Edward Newton, Esq., were elected Fellows.

A notice was read from Dr. Iliff, F.L.S., of the occurrence of a great abundance of *Mermis nigrescens* in gardens in the neighbourhood of Epsom, after heavy rain and thunder—an observation which was confirmed by several Fellows of the Society, who had observed the same phenomenon in other localities about the same time.

Dr. Cobbold exhibited specimens of *Lepidium ruderale*, which he had gathered at Southall, Middlesex.

The following Papers were read, viz. :—

1. "Further observations on *Cygnus Passmori* and *C. buccinator*, by the Rev. William Hincks, F.L.S. (See 'Zoological Proceedings,' vol. ix.)

2. "Notes on the *Thysanura*, Part 3;" by Sir John Lubbock, Bart., V.P.L.S., Pres. Entomol. Soc., &c. (See 'Transactions,' vol. xxvi. part 1.)

3. "Notes on some Insect- and other Migrations observed in Equatorial America," by Richard Spruce, Esq. Communicated by the President. (See 'Zoological Proceedings,' vol. ix.)

4. "On the Mechanical Appliances by which Flight is attained in the Animal Kingdom," by James Bell Pettigrew, M.D. Communicated by Professor Huxley, F.R.S. & L.S. (See 'Transactions,' vol. xxvi. part 1.)

June 20th, 1867.

Sir John Lubbock, Bart., V.P., in the Chair.

The following Papers were read, viz. :—

1. "Notes on the Anatomy and Physiology of the *Tunicata*," by Albany Hancock, Esq., F.L.S. (See 'Zoological Proceedings,' vol. ix.)

2. "Catalogue of *Erycinidæ*, a Family of Diurnal *Lepidoptera*," by H. W. Bates, Esq., F.Z.S., Assist. Sec. R. Geogr. Soc. Communicated by George Busk, Esq., Sec. L.S. &c. (See 'Zoological Proceedings,' vol. ix.)

3. "Supplement to the List of Australian *Longicornia*," by F. P. Pascoe, Esq., F.L.S. &c. (See 'Zoological Proceedings,' vol. ix.)

4. "On the introduction of Maize (*Zea Mays*, L.) into China, with Notices of the Plant by Chinese Authors;" by W. F. Mayers, Esq.; with an introductory Note by H. F. Hance, Ph.D. &c.

5. "Notes on the Botany of Mt. Egmont and the Province of Marlborough, New Zealand," by Mr. J. Buchanan. Communicated by J. D. Hooker, M.D., F.R.S., V.P.L.S. &c. (See 'Botanical Proceedings, vol. x.)

6. The conclusion of Dr. Pettigrew's Paper "On the Mechanical appliances by which Flight is attained in the Animal Kingdom."

Receipts and Payments of the Linnean Society from May 1, 1866, *to April* 30, 1867.

	£	*s.*	*d.*
Balance in the hands of the Bankers at the last audit ...	419	2	5
Admission Fees 162 0 0			
Compositions 290 0 0			
Annual Contributions of £2 2*s.* 33 12 0			
Do. do. of £3 0*s.* 579 18 0			
Transactions, Journal, and Library Catalogue sold 181 0 6			
Interest on Consols and other Investments 45 1 1			
	1291	11	7
Contributions towards expense of Papers in 'Linn. Trans.'	135	0	0
	£1845	14	0

	£	*s.*	*d.*
Insurance	10	10	0
Repairs and Furniture	67	6	11
Coals, Gas, Tea, Postage, &c.....	102	9	8
Salaries	210	0	0
Expenses of the Society's Publications	738	15	11
Books purchased	73	8	3
Bookbinding and Stationery	14	3	2
Commission	16	10	11
	£1233	4	10
Withdrawn by Treasurer for Investment	200	0	0
*Balance in the hands of the Bankers.....	412	9	2
	£1845	14	0

* The above balance includes £58 received on account of the expense of a Paper not yet completed.

W. WILSON SAUNDERS, *Treasurer.*

The foregoing Accounts have been examined, and the Balance in hand found to be correctly stated at £412 9*s.* 2*d.*

GEORGE BENTHAM, *President.*
GEORGE BUSK, *Secretary.*
R. C. A. PRIOR.

ALFRED WHITE,
J. W. DUNNING,
EDWARD H. VINEN.

May 20th, 1867.

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Adelaide, S. A.:—

Philosophical Society.

Annual Report and Transactions, for the year ending Sept. 30, 1866. 4to. Adelaide, 1867.

C. A. WILSON, Esq., F.L.S.

Amsterdam:—

Kon. Akademie van Wetenschappen.

Jaarboek voor 1865. 8vo. Amsterdam.

Processen-Verbaal van de gewone Vergaderingen der Akademie. Afd. Natuurkunde, van Januarij 1865 tot ... April 1866. 8vo.

Verslagen en Mededeelingen. Afdeeling Letterkunde, Deel 9. 8vo. Amsterdam, 1865.

—— Afd. Natuurkunde. 2de Reeks, Deel 1. 8vo. *Ib.*, 1866.

Catalogus van de Boekerij der Akademie, Deel 2, Stuk 1. 8vo. *Ib.*, 1866. THE ACADEMY.

TITLES. DONORS.

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Basel :—

Naturforschende Gesellschaft.

Verhandlungen. Theil 4, Heft 3. 8vo. Basel, 1866. THE SOCIETY.

Batavia :—

Kon. Natuurkundige Vereeniging.

Natuurkundig Tijdschrift voor Nederlandsch Indië. Deel 28, Afl. 4–6, & Deel 29, Afl. 1. 8vo. Batavia &c., 1865. THE ASSOCIATION.

Berlin :—

Kön. Akademie der Wissenschaften.

Abhandlungen, aus dem J. 1865. 4to. Berlin, 1866.

Monatsberichte, für 1866, & Januar–März, 1867. 8vo. Berlin, 1866–67. THE ACADEMY.

Verein zur Beförderung des Gartenbaues in den Kön. Preussischen Staaten.

Wochenschrift; Redakteur Prof. Dr. Karl Koch. Jahrg. 9, Nos. 16–52. 4to. Berlin, 1866. THE SOCIETY.

Bonn :—

Naturhistorischer Verein der Preussischen Rheinlande, &c.

Verhandlungen. Jahrgang 23. (Nebst einer geologischen Uebersichtskarte.) 8vo. Bonn, 1866. THE SOCIETY.

Bordeaux :—

Société des Sciences Physiques et Naturelles.

Mémoires; Tomes 1–3, & Tome 4, Cahier 1 & 2. 8vo. Paris &c., 1854–66. THE SOCIETY.

Boston, Mass. :—

American Academy of Arts and Sciences.

Proceedings, Vol. 3, Sheets 24–31; Vol. 6, Sheets 39–64; and Vol. 7, Sheets 1–12. 8vo. Boston and Cambridge, 1857–66. THE ACADEMY.

Museum of Comparative Zoology, Harvard College. See **Cambridge.**

Society of Natural History.

Proceedings, Vol. 10, Sheets 1–18. 8vo. (Boston) 1865–6.

Condition and Doings of the Society, as exhibited by the Annual Reports of the Custodian, Treasurer, &c. 8vo. *Ib.*, 1865. THE SOCIETY.

TITLES.	DONORS.

ACADEMIES and SOCIETIES (*continued*).

Bremen :—

Naturwissenschaftlicher Verein.

Abhandlungen. Band 1, Hft. 1 & 2. 8vo. Bremen, 1866–67. — THE SOCIETY.

Brussels :—

Académie Royale des Sciences, &c.

Mémoires, Tome 35. 4to. Bruxelles, 1865.

Mémoires couronnés, &c. Collection-in 8vo. Tome 18. 8vo. *Ib.* 1866.

Bulletins. 2^{e} série, Tomes 20 & 21. 8vo. *Ib.* 1865–66.

Annuaire. 32^{e} Année. 12mo. *Ib.*, 1866. — THE ACADEMY.

Observations des Phénomènes périodiques, pendant l'Année 1863. (Extr. des Mémoires, Tome 36.) 4to. — M. QUETELET.

Société Roy. de Botanique de Belgique.

Bulletins, Tome 4, No. 3, et Tome 5. 8vo. Bruxelles, 1866–67. — THE SOCIETY.

Buenos Ayres :—

Museo Público.

Anales del M. P.; para dar á conocer los Objetos de la Historia Natural, nuevos ó poco conocidos, en este Establecimiento; por German Burmeister, M.D., &c. Entrega 1 & 3. 4to. Buenos Ayres, 1864–66. — THE EDITOR?

Sociedad Paleontologica.

Actas. (=Anales del Museo Público.)

Caen :—

Société Linnéenne de Normandie.

Bulletin, Vol. 10. 8vo. Caen, 1866. — THE SOCIETY.

Calcutta :—

Asiatic Society of Bengal.

Journal: New Series, Nos. 133–137. 8vo. Calcutta, 1866.

Proceedings, Nos. 1–11 for 1865, Nos. 6–12 for 1866, and No. 1 for 1867. 8vo. *Ib.* 1865–67. — THE SOCIETY.

Cambridge, Mass. :—

Museum of Comparative Zoology, at Harvard College.

Annual Reports of the Trustees, &c., for 1865. 8vo. Boston, 1866. — THE MUSEUM?

TITLES. DONORS.

ACADEMIES and SOCIETIES (*continued*).

Carlsruhe :—

Naturwissenschaftlicher Verein.

Verhandlungen, Hft. 1 & 2. 4to. Carlsruhe, 1864–66. THE SOCIETY.

Cherbourg :—

Société Imp. des Sciences.

Mémoires, Tomes 11 & 12 (=2^{e} sér. T. 1 & 2). 8vo. Paris, 1865–66. THE SOCIETY.

Chicago, Illinois :—

Academy of Sciences.

Proceedings, Sheets 1–3, Act of Incorporation, Report of the Board of Trustees, &c. 8vo. 1865. THE ACADEMY.

Colombo, Ceylon :—

Royal Asiatic Society; Ceylon Branch.

Journal. 1865–66. 8vo. Colombo, 1866. THE SOCIETY.

Copenhagen :—

Botaniske Forening.

Botanisk Tidskrift. Bind 1. 8vo. Kjöbenhavn, 1866. PURCHASED.

Devonshire :—

Association for the Advancement of Science, &c.

Report and Transactions, Parts 4 & 5. 8vo. London, 1865–66. THE ASSOCIATION.

Dresden :—

Academia Cæs. Germanica Naturæ Curiosorum.

Nova Acta, Tom. 32, Partes 1 & 2. 4to. Dresdæ, 1865–67. THE ACADEMY.

Dublin :—

Natural History Society.

Proceedings, Vol. 4, Pt. 3. 8vo. Dublin, 1865. THE SOCIETY.

Royal Dublin Society.

Journal, No. 35. 8vo. Dublin, 1866. THE SOCIETY.

Royal Geological Society of Ireland.

Journal, Vol. 1, Part 2. 8vo. London, Dublin, &c., 1866. THE SOCIETY.

Royal Irish Academy.

Transactions; Vol. 24. Science, Pts. 5, 7, & 8; Polite Literature, Pt. 3; Antiquities, Pts. 5 & 7. 4to. Dublin, 1865–67.

Proceedings, Vol. 9, Pt. 4. 8vo. *Ib.*, 1867. THE ACADEMY.

TITLES. DONORS.

ACADEMIES and SOCIETIES (*continued*).

Edinburgh :—

Botanical Society.

Transactions, Vol. 8, Part 3. 8vo. Edinburgh, 1866.
THE SOCIETY.

Royal Society.

Transactions ; Vol. 24, Part 2. 4to. (Edinburgh, 1866.)

Proceedings, Session 1865–66. (Nos. 68–70.) 8vo. *Ib.*, 1866.
THE SOCIETY.

Frankfurt a. M. :—

Senckenbergische Naturforschende Gesellschaft.

Abhandlungen, Band 6, Heft 1–2. 4to. Frankfurt a. M., 1866.
THE SOCIETY.

Geneva :—

Société de Physique et d'Histoire Naturelle.

Mémoires, Tome 18, Partie 2. 4to. Genève, 1866.
THE SOCIETY.

Giessen :—

Oberhessische Gesellschaft für Natur- und Heilkunde.

Bericht 12. 8vo. Giessen, 1867. THE SOCIETY.

Gottingen :—

Königl. Gesellschaft der Wissenschaften.

Abhandlungen, Band 12. 4to. Göttingen, 1866.

Nachrichten, aus dem J. 1866. 12mo. *Ib.*, 1866.
THE SOCIETY.

Halifax, Nova Scotia :—

Nova-Scotian Institute of Natural Science.

Proceedings and Transactions, Vol. 1, Part 4. 8vo. Halifax, N. S., 1867. THE INSTITUTE.

Hobart Town. See **Tasmania.**

Jena :—

Academia Naturæ Curiosorum.

Miscellanea curiosa Medico-physica : s. Ephemerides Medico-physicæ German. &c. Anni 2, 3, 4, & 5 (1671–4). 4to. Jenæ, Lipsiæ, &c., 1671–76.

—— Decuriæ 2, Anni 1 & 2 (1682–3). 4to. Norimbergæ, 1683–98. JOHN MILLAR, M.D., F.L.S.

Kiev :—

(Natural History of the Government of the Kiev Educational District) [in Russian]. 4to. Kiev, 1851.
G. BENTHAM, Esq., Pres. L.S.

Titles.	Donors.

Academies and Societies (*continued*).

Lausanne :—

Société Vaudoise des Sciences Naturelles.

Bulletin, Tome 9, Nos. 54 & 55. 8vo. Lausanne, 1866. The Society.

Leeds :—

Philosophical and Literary Society.

Annual Report (46th) of the Council for 1865–66. 8vo. Leeds, 1866. The Society.

Leyden :—

Annales Musei Botanici Lugduno-Batavi. See **Miquel, *F.A.G.***

Nederlandsche Entomologische Vereeniging.

Tijdschrift voor Entomologie ; onder redactie van Prof. J. van der Hoeven, &c. Jaargang 8, Afl. 5 & 6. 8vo. 'S Gravenhage, 1865.

—— 2de serie, Deel 1, Afl. 1 & 2. 8vo. *Ib.*, 1866. The Association.

Liége :—

Société Royale des Sciences.

Mémoires, Tomes 19 & 20. 8vo. Liége, 1866. The Society.

London :—

Art-Union.

Report of the Council for 1866. 8vo. London, 1866.

Almanack for 1867. *Ib.* The Art-Union.

British Association for the Advancement of Science.

Report of the 35th Meeting. 8vo. London, 1866. The Association.

Entomological Society.

Transactions. 3rd Series, Vol. 3, Pt. 3, & Vol. 5, Pts. 3–5. 8vo. London, 1866–67. The Society.

Geological Society.

Quarterly Journal, Vol. 22, Pts. 3 & 4, and Vol. 23, Pts. 1 & 2. 8vo. London, 1866–67. The Society.

International Horticultural Exhibition and Botanical Congress.

Report of Proceedings. 8vo. London, 1866. The Committee.

Microscopical Society.

Quarterly Journal. See **Journals.**

TITLES.	DONORS.

ACADEMIES and SOCIETIES (*continued*).

London (*continued*):—

Palæontographical Society. Publications, Vol. 19. 4to. London, 1866. Including:—

1. **Jones,** *T. R.*, **Parker,** *W. K.*, and **Brady,** *H. B.* Monograph of the Foraminifera of the Crag. Part 1.
2. **Duncan,** *Martin.* Monograph of the British Fossil Corals. 2nd Series, Part 1.
3. **Woodward**, *Henry.* Monograph of the British Fossil Crustacea. Part 1.
4. **Davidson,** *Thomas.* Monograph of British Fossil Brachiopoda. Part 7, No. 1 (Silurian Brachiopoda: with Observations on the Classification of the Silurian Rocks, by Sir R. I. Murchison, Bart.). PURCHASED.

Pharmaceutical Society.

Pharmaceutical Journal and Transactions. 2nd Series, Vol. 8. 8vo. London, 1866–67.

Calendar. 8vo. *Ib.*, 1866. THE SOCIETY.

Ray Society.

Bowerbank, *J. S.* Monograph of the British Spongiadæ, Vol. 2. 8vo. London, 1866.

Flower, *W. H.*, Ed. Recent Memoirs on the Cetacea, by Professors Eschricht, Reinhardt, and Lilljeborg. fol. *Ib.*, 1866. PURCHASED.

Royal Institution.

Proceedings, Vol. 4, Part 8, and Vol. 5, Part 1 (Nos. 44 & 45). 8vo. London, 1866–67.

Additions to the Library, No. 9. 8vo.

List of the Members, Officers, &c., 1866; with the Report of the Visitors. 8vo. London, 1866.

THE INSTITUTION.

Royal Society.

Proceedings (Vol. 15), Nos. 85–92. 8vo. London, 1866–67. THE SOCIETY.

Royal Agricultural Society.

Journal. 2nd Series, Vol. 2, Part 2, and Vol. 3, Part 1. 8vo. London, 1866–67. THE SOCIETY.

Royal Asiatic Society of Great Britain and Ireland.

Journal. New Series, Vol. 2, Part 2. 8vo. London, 1866. THE SOCIETY.

TITLES.	DONORS.

ACADEMIES and SOCIETIES (*continued*).

London (*continued*) :—

Royal College of Physicians.

List of Fellows, Members, &c. 8vo. London, 1867. — THE COLLEGE.

Royal Geographical Society.

Proceedings, Vol. 10, Nos. 4 & 6, and Vol. 11, Nos. 1 & 2. 8vo. London, 1866–67. — THE SOCIETY.

Royal Horticultural Society.

Journal. New Series, Vol. 1, Parts 3 & 4. 8vo. London, 1866–67.

Proceedings. New Series, Vol. 1, Nos. 5–7. 8vo. *Ib.*, 1866–67. — THE SOCIETY.

Royal Medical and Chirurgical Society.

Medico-Chirurgical Transactions, Vol. 49 (=2nd Series, Vol. 31). 8vo. London, 1866.

Proceedings, Vol. 5, Nos. 5–7. 8vo. *Ib.*, 1866–67. — THE SOCIETY.

Society of Arts, &c.

Journal, Nos. 709–760. 8vo. London, 1866–67. — THE SOCIETY.

Victoria Institute; or Philosophical Society of Great Britain.

Journal of the Transactions of. Vol. 1, No. 1. 8vo. London, 1866. — THE INSTITUTE?

Zoological Society.

Transactions, Vol. 5, Part 5, and Vol. 6, Parts 1 & 2. 4to. London, 1866–67.

Proceedings of the Scientific Meetings (with Illustrations), Parts 1–3 for 1865, and Parts 1 & 2 for 1866. 8vo. *Ib.* — THE SOCIETY.

Lyon :—

Société Linnéenne.

Annales. Nouvelle Série, Tomes 12 & 13. 8vo. Paris, 1866. — THE SOCIETY.

Madras :—

Literary Society.

Madras Journal of Literature and Science. 3rd Series, Part 2. 8vo. Madras, 1866. — THE SOCIETY.

Melbourne. See **Victoria.**

Titles.	Donors.

Academies and Societies (*continued*).

Montreal :—

Natural History Society.

Canadian Naturalist and Geologist. New Series, Vol. 2, No. 6, and Vol. 3, No. 2. 8vo. Montreal, 1865–66. The Society.

Moscow :—

Société Impériale des Naturalistes.

Bulletin, Tome 38, Nos. 3 & 4, and Tome 39, Nos. 1 & 2. 8vo. Moscou, 1865–66. The Society.

Munich :—

Kön. Bayer. Akademie der Wissenschaften.

Sitzungsberichte, 1866, Bd. 1, Hft. 3–4, & Bd. 2, Hft. 1–4. 8vo. München, 1866. The Academy.

Newcastle-upon-Tyne :—

Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne.

Natural History Transactions of Northumberland and Durham. Vol. 1, Part 2. 8vo. London &c., 1866. The Society.

New York :—

Lyceum of Natural History.

Annals, Vol. 8, Nos. 4–10. 8vo. New York, 1865–66. The Lyceum.

United States Sanitary Commission.

Bulletin, Vols. 1–3. 8vo. New York, 1866.

Documents, Vols. 1 & 2. 8vo. New York, 1866. The Commission.

Palermo :—

R. Istituto Tecnico.

Giornale di Scienze Naturali ed Economiche. Vol. 1, Fasc. 3 & 4. 4to. Palermo, 1866. The Institute.

Paris :—

Société Botanique de France.

Bulletin, Tome 12, Comptes Rendus des Séances, No. 5; Tome 13, C. R., Nos. 1 & 2; Revue Bibliogr., C & D; Tables &c. du Tome 9. 8vo. Paris, 1865–66. The Society.

Société Entomologique de France.

Annales, 4^{e} Série, Tomes 5 & 6. 8vo. Paris, 1865–67. The Society.

TITLES. DONORS.

ACADEMIES and SOCIETIES (*continued*).

Paris (*continued*) :—

Société Impériale et Centrale d'Horticulture de France.

Journal, 2e Série, Tome 1, No. 4. 8vo. Paris, 1867.

THE SOCIETY.

Universal Exhibition, 1867.

Catalogue of South Australian Contributions. 8vo. Adelaide, 1867. C. A. WILSON, Esq., F.L.S.

Petersburg :—

Académie Imp. des Sciences.

Mémoires, 7e Série, Tome 9, and Tome 10, Nos. 1 & 2. 4to. St. Pétersbourg, 1865–66.

Bulletin, Tome 9, Nos. 1–4. 4to. *Ib.*, 1865–66.

THE ACADEMY.

Philadelphia :—

Academy of Natural Sciences.

Journal, New Series, Vol. 6, Part 1. Fol. Philadelphia, 1866.

Proceedings for 1866 (Nos. 1–5). 8vo. *Ib.*, 1866.

THE ACADEMY.

American Philosophical Society.

Proceedings, Vol. 10, No. 75. 8vo. Philadelphia, 1866.

Catalogue of the Library, Part 2. 8vo. *Ib.*, 1866.

THE SOCIETY.

Entomological Society.

Proceedings, Vols. 4, 5, & 6, No. 1. 8vo. Philadelphia, 1865–66.

Practical Entomologist, Vol. 2, Nos. 1 & 2. 4to. *Ib.*, 1866.

THE SOCIETY.

Plymouth :—

Plymouth Institution, and Devon and Cornwall Natural History Society.

Annual Report and Transactions, Vol. 2, Part 1. 8vo. Plymouth, 1866. THE INSTITUTION.

Presburg :—

Verein für Naturkunde.

Verhandlungen; redigirt vom Secretär Prof. E. Mack. Jahrg. 8 & 9. 8vo. Presburg, 1865–66.

THE ASSOCIATION.

TITLES. DONORS.

ACADEMIES and SOCIETIES (*continued*).

Regensburg :—

Kön. Bayerische Botanische Gesellschaft.

Flora, neue Reihe. Jahrgang 24, und Jahrg. 25, Nos. 1–14. 8vo. Regensburg, 1866–67. PURCHASED.

St. Louis, Mo.

Academy of Sciences.

Transactions, Vol. 2, No. 2. 8vo. St. Louis, 1866.

Stettin :—

Entomologischer Verein.

Entomologische Zeitung. Jahrgang 27. 8vo. Stettin, 1866.

Linnæa Entomologica, Band 16. 8vo. Leipzig, 1866. THE SOCIETY.

Strasbourg :—

Société des Sciences Naturelles.

Mémoires, Tome 6, Livr. 1. 4to. Paris and Strasbourg, 1866. THE SOCIETY.

Tasmania :—

Royal Society.

Monthly Notices of Papers and Proceedings, for 1865. 8vo. Hobart Town, 1865.

Report for the year 1865. 8vo. Tasmania, 1866.

Catalogue of Plants in the Royal Society's Gardens, Queen's Park, Hobart Town. 8vo. *Ib.*, 1865. THE SOCIETY.

Toronto :—

Canadian Institute. See **Journals.**

Upsal :—

Royal Society of Sciences.

Nova Acta Reg. Soc. Scientiarum. Ser. 3, Vol. 6, Fasc. 1. 4to. Upsaliæ, 1866. THE SOCIETY.

Venice :—

R. Istituto Veneto di Scienze, Lettere ed Arti.

Memorie, Vol. 12, Pte. 3, & Vol. 13, Pte. 1 & 2. 4to. Venezia, 1866–67.

Atti, Serie 3, Tomo 11, Disp. 5–10, & Tomo 12, Disp. 1–3, 4to. *Ib.*, 1865–67. THE INSTITUTE.

Victoria :—

Royal Society.

Transactions and Proceedings, Vol. 7. 8vo. Melbourne, 1866. THE SOCIETY.

	TITLES.	DONORS.

ACADEMIES and SOCIETIES (*continued*).

Vienna :—

Kaiserl. Akademie der Wissenschaften. Math. Nat. Classe.
Denkschriften, Band 25. 4to. Wien, 1866.
Sitzungsberichte, Abth. 1, Bd. 52, Hft. 3–5, Bd. 53, Hft. 1–5, und Bd. 54, Hft. 1–3; Abth. 2, Bd. 52, Hft. 4 & 5, Bd. 53, Hft. 1–5, and Bd. 54, Hft. 1–4. 8vo. *Ib.*, 1866–67.
Anzeiger. Jahrgang 1866, Nos. 16–24, & 26–28, und Jahrg. 1867, Nos. 1–15. 8vo. *Ib.* THE ACADEMY.

K. K. Geologische Reichsanstalt.
Jahrbuch, Band 15, No. 4, and Bd. 16, Nos. 1–4. 8vo. Wien, 1865–66. THE INSTITUTE.

K. K. Zoologisch-Botanische Gesellschaft.
Verhandlungen, Bd. 15 & 16. 8vo. Wien, 1865–66. THE SOCIETY.

Washington :—

Smithsonian Institution.
Annual Report of the Board of Regents for 1864. 8vo. Washington, 1865. THE INSTITUTION.

War Department: Surgeon-General's Office.
Circular, No. 6. Reports on the ... Materials available for a Medical and Surgical History of the Rebellion. 4to. Philadelphia, 1865. THE OFFICE.

Würzburg :—

Physikalisch-Medicinische Gesellschaft.
Würzburger Naturwissenschaftliche Zeitschrift: redigirt von F. Sandberger, &c., Band 6, Hft. 2 & 3. 8vo. Würzburg, 1866.
—— Medicinische Zeitschrift: redigirt von H. v. Bamberger, &c., Band 7, Hft. 1–3. 8vo. *Ib.*, 1866–67. THE SOCIETY.

Journals :—

Annales des Sciences Naturelles. 5e Série. Botanique, Tome 4, Nos. 5 & 6, and Tomes 5 & 6; Zoologie, Tome 5, No. 6, Tome 6, and Tome 7, No. 1. 8vo. Paris, 1865–66. PURCHASED.
Annals and Magazine of Natural History. 3rd Series, Nos. 103–114. 8vo. London, 1866–67. DR. FRANCIS, F.L.S.

TITLES. DONORS.

Journals (*continued*) :—

Archiv für Mikroskopische Anatomie: herausgegeben vom Prof. Max Schultze. Band 2 (Heft 1–4). 8vo. Bonn, 1866. PURCHASED.

Archiv für Naturgeschichte; gegründet von A. F. A. Wiegmann; fortgesetzt von W. F. Erichson, &c. Jahrg. 30, Heft 6, Jahrg. 31, Heft 5 & 6, and Jahrg. 32, Heft 2–5. 8vo. Berlin, 1864–66. PURCHASED.

Archives of Dentistry: edited by Edwin Truman. Vol. 1. 8vo. London, 1865. THE EDITOR.

Athenæum. Parts 462–73 (=Nos. 2014–65). 4to. London, 1866. THE PUBLISHERS.

Botanical Magazine. 3rd Series, continued by J. D. Hooker, M.D., F.R.S. & L.S. Nos. 259–70. 8vo. London, 1866–67. PURCHASED.

Botanische Zeitung. Redaction: H. von Mohl und D. F. L. von Schlechtendal. Jahrg. 24, Nos. 20–52, and Jahrg. 25, Nos. 1–20. 4to. Leipzig, 1866–67. PURCHASED.

Botanisk Tidsskrift; udgivet af den Botaniske Forening i Kjöbenhavn; ved Dr. Peder Heiberg. See ACADEMIES, **Copenhagen.**

Canadian Journal of Industry, Science, and Art. New Series, Nos. 63 & 64. 8vo. Toronto, 1866–67. THE CANADIAN INSTITUTE.

Entomologist: edited by E. Newman, Esq., F.L.S. Nos. 30–42. 8vo. London, 1866–67. THE EDITOR.

Entomologist's Annual for 1867. 12mo. London, 1867. H. T. STAINTON, Esq., F.L.S.

Entomologist's Monthly Magazine: conducted by H. G. Knaggs, M.D., R. McLachlan, Esq., &c. Nos. 26–37. 8vo. London, 1866–67. THE EDITORS.

Entomologist's Weekly Intelligencer. Vols. 2–10. 8vo. London, 1857–61. H. T. STAINTON, Esq., F.L.S.

Flora. See ACADEMIES, **Regensburg.**

Gardeners' Chronicle and Agricultural Gazette. Nos. 25–52 for 1866, and Nos. 1–24 for 1867. 4to. London. PURCHASED.

Hardwicke's Science-Gossip for 1865: edited by M. C. Cooke, Esq. 8vo. London, 1866. THE EDITOR.

Ibis; a Quarterly Journal of Ornithology: edited by Alfred Newton, M.A., F.L.S., &c. New Series, Vol. 2, Nos. 7–10. 8vo. London, 1866–67. PURCHASED.

TITLES. DONORS.

Journals (*continued*) :—

Illustration Horticole; Journal spécial des Serres et des Jardins: rédigé par Ch. Lemaire, Prof. de Botanique. Tome 14 (2de Série, Tome 4), Livr. 1–4. 8vo. Gand, 1867.
The Publisher, M. A. VERSCHAFFELT.

Jahrbücher für wissenschaftliche Botanik: herausgegeben von Dr. N. Pringsheim. Band 5. 8vo. Leipzig, 1866–67.
PURCHASED.

Journal of Botany, British and Foreign: edited by B. Seemann, Ph.D., F.L.S., &c. Nos. 43–54. 8vo. London, 1866–67. PURCHASED.

Journal de Conchyliologie; publié sous la direction de MM. Crosse et Fischer. 3e Série, Tomes 5 & 6, and Tome 7, Nos. 1 & 2. 8vo. Paris, 1865–67. PURCHASED.

Malakozoologische Blätter; als Fortsetzung der Zeitschrift für Malakozoologie: herausg. von Dr. K. T. Menke und Dr. Louis Pfeiffer. Bd. 6–13, and Bd. 14, Bogen 1–6. 8vo. Cassel, 1860–67. PURCHASED.

Nederlandsch Kruidkundig Archief: uitgegeven door W. H. de Vriese, F. Dozy, J. H. Molkenboer, &c. Deel 1, 2, 3, & Deel 4, Stuk 1 & 2. 8vo. Leyden, 1846–56.
PURCHASED.

Philosophical Magazine and Journal of Science. 4th Series. Nos. 213–225. 8vo. London, 1866–67.
DR. FRANCIS, F.L.S.

Popular Science Review: edited by Henry Lawson, M.D. Nos. 20–23. 8vo. London, 1866–67.
The Publisher, R. HARDWICKE, Esq., F.L.S.

Quarterly Journal of Microscopical Science: edited by E. Lankester, M.D., F.R.S. & L.S., and George Busk, Esq., F.R.S., Sec. L.S. New Series, Nos. 22–26. 8vo. London, 1866–67. THE R. MICROSCOPICAL SOCIETY.

Reader. Nos. 182–203, and 205–211. 4to. London, 1866–67. THE PUBLISHER.

Zeitschrift für wissenschaftliche Zoologie: herausgegeben von C. T. von Siebold und Albert Kölliker. Bd. 16, Hft. 3 & 4, and Bd. 17, Hft. 1 & 2. 8vo. Leipzig, 1866–67.
PURCHASED.

Zoologist: edited by Edward Newman, F.L.S. 2nd Series, Nos. 8–21. 8vo. London, 1866–67. PURCHASED.

TITLES. DONORS.

Alfonso X., *Re de Castilla.* Libros del Saber de Astronomia; Tomo 4. fol. Madrid, 1866.
THE ACADEMY OF SCIENCES, MADRID?

Anderson, *N. J.* Monographia Salicum hucusque cognitarum. Pars 1. 4to. Holmiæ, 1867. THE AUTHOR.

Bartling, *F. T.* Ordines Naturales Plantarum, eorumque characteres et affinitates. 8vo. Gottingæ, 1830.

Bary, *A. de.* Handb. d. physiol. Botanik. See **Hofmeister,** *W.*

Bateman, *James.* Monograph of Odontoglossum, Part 4. fol. London, 1867. THE AUTHOR.

Batka, *J. B.* Monographie der Cassien-Gruppe *Senna.* 4to. Prag, 1866. THE AUTHOR.

Bauernfeind, *Dr. C. M.* Die Bedeutung Moderner Gradmessungen. 4to. München, 1866. THE AUTHOR?

Bentham, *George.* Flora Australiensis. Vol. 3. (Myrtaceæ to Compositæ.) 8vo. London, 1866. THE AUTHOR.

—— Handbook of the British Flora. New Edition. 8vo. Ib., 1866. THE AUTHOR.

Berkeley, *M. J.* Handbook of British Mosses. 8vo. London, 1863. THE AUTHOR.

Blake, *C. Carter.* On certain "Simious" Skulls; with especial reference to a Skull from Louth, in Ireland. 8vo.
THE AUTHOR.

Bowerbank, *J. S.* British Spongiadæ. See *Ray Society.*

Bree, *C. R.* Species not transmutable, nor the result of Secondary Causes. 8vo. London, 1860.

—— History of the Birds of Europe, not observed in the British Isles. 4 vols. 8vo. Ib., 1863. THE AUTHOR.

Brusina, *Spiridione.* Contribuzione pella Fauna dei Molluschi Dalmati. 8vo. Vienna, 1866. ZOOL.-BOT. VEREIN, VIENNA?

Burmeister, *Hermann,* Ed. See ACADEMIES, &c. **Buenos Ayres.**

Busk, *George,* Ed. Quart. Journ. of Microscop. Science. See **Journals.**

Caruel, *T.* I generi delle Ciperoidee Europee. 4to. Firenze, 1866. THE AUTHOR?

Carus, *J. V.* Handbuch der Zoologie. See **Peters,** *W. C. H.*

Chatin, *Ad.* Sur la Vrille des Cucurbitacées. (C. R. . . de la Soc. de Biologie, 1866.) 8vo. THE AUTHOR?

Clark, *Hamlet.* On the Mexican Species of Hydropori. (Ann. and Mag. Nat. Hist., Sept. 1862.) 8vo.

TITLES. DONORS.

Clark, *Hamlet.* Description of a new species of Hydroporus, Clairv. (Ann. & Mag. Nat. Hist., Nov. 1862.) 8vo.

—— Catalogue of Chrysomelidæ of S. America. (Ibid., Aug. and Sept. 1864.) 8vo.

—— Descriptions of species of Phytophaga received from Pulo Penang or its neighbourhood. (Ibid., Feb. 1865.) 8vo.

—— Examination of the . . . genus Cœlomera, and its affinities. (Ibid., Oct. and Nov. 1865.) 8vo.

—— Descriptions of new East Asiatic species of Haliplidæ and Hydroporidæ. (Trans. Entomol. Soc., 3rd Series, Vol. 1.) 8vo. 1862.

——Notes on the genus Hydaticus, Leach; with descriptions of new species. (Ibid., 3rd Ser., Vol. 2.) 8vo. 1864.

—— Notes on the genus Schematiza; with descriptions of new species. (Ibid., 3rd Ser., Vol. 2.) 8vo. 1864.

—— Descriptions of new Phytophaga from W. Australia. (Ibid., 3rd Ser., Vol. 2.) 8vo. 1865.

—— Descriptions of species of . . . Hydroporus, new to the European or British Catalogues. (Journal of Entomology, No. 6, 1862.) 8vo.

—— Descriptions of new Australian Phytophaga. (Ibid, No. 11, 1864.) 8vo.

—— Catalogue of the Dytiscidæ and Gyrinidæ of Australasia; with descriptions of new species; Parts 1–3. (Ibid., 1862–64.) 8vo.

—— Examination of the Halticidæ of South America. (Ibid., No. 13, 1865.) 8vo.

—— Catalogue of Halticidæ (Continuation of Brit. Mus. Cat., Part 1, 1860.) 8vo. THE AUTHOR.

Clark, *H.*, & **Bates,** *H. W.* Catalogue of Phytophaga, Part 1; with an Appendix, containing descriptions of new species. 8vo. London, 1866. THE REV. H. CLARK, F.L.S.

Clarke, *Benjamin.* New Arrangement of Phanerogamous Plants, with especial reference to relative position, including their relations with the Cryptogams. obl. fol. London, 1866.
JOSHUA CLARKE, Esq., F.L.S.

Cooke, *M. C.* Plain and Easy Account of British Fungi. 8vo. London, 1862.

—— Manual of Botanic Terms. 8vo. Ib., 1862.

—— The genus Ascobolus; with descriptions of the British Species. (Journ. of Bot., May 1864.) 8vo.

TITLES. DONORS.

Cooke, *M. C.* Our Reptiles; a Plain and Easy Account of the Lizards, Snakes, Newts, Toads, &c., indigenous to Great Britain. 8vo. London, 1865.

—— Rust, Smut, Mildew, and Mould. An Introduction to the study of Microscopic Fungi. 8vo. Ib., 1865.

—— Decades of British Fungi. 8vo.

—— Foliicolous Sphæriæ. (Journ. of Bot., 1866.) 8vo.

—— Index Fungorum Britannicorum. 8vo. London.

—— Fern Book for everybody. 12mo. Ib., 1867.

THE AUTHOR.

Dana, *J. D.* On Cephalization. (Amer. Journ. Sc. and Art, Vol. 41.) 8vo. 1866.

—— A Word on the Origin of Life. (Ib., Vol. 41.) 8vo. 1866. THE AUTHOR.

Darwin, *Charles.* The Origin of Species by means of Natural Selection. 4th Edition. 8vo. London, 1866. THE AUTHOR.

Daubeny, *Charles.* Christianity and Rationalism in their relations to Natural Scienee. 8vo. Oxford &c., 1867.

—— On Ozone. (Journ. of Chem. Soc. 1867.) 8vo.

THE AUTHOR.

Davidson, *Thomas.* British Fossil Brachiopoda. See *Palæontographical Society.*

De Candolle, *Alphonse,* Ed. Prodromus Systematis Naturalis Regni Vegetabilis. Pars 15, Sectio posterior, Fasc. 2. 8vo. Parisiis, 1866. PURCHASED.

Drouet, *Henri.* Catalogue de la Flore des Iles Açores. 8vo. Paris, 1866. PURCHASED.

Du Bocage, *José, Viconte Barboza,* & *F. de* **Brito Capello.** Apontamentos para a Ichthyologia de Portugal. Peixes Plagiostomos. Parte 1, Esqualos. 4to. Lisboa, 1866.

M. DU BOCAGE.

Duchartre, *P.* Eléments de Botanique. 8vo. Paris, 1867.

THE AUTHOR.

Duncan, *Martin.* British Fossil Corals. See *Palæontographical Society.*

Endlicher, *Steph.* Generum Plantarum supplementum 5. 8vo. Vindobonæ, 1850. PURCHASED.

Flower, *T. B.* Flora of Wiltshire. No. 10. 8vo. (Devizes.)

THE AUTHOR.

Flower, *W. H.,* Ed. Recent Memoirs on the Cetacea. See *Ray Society.*

TITLES. DONORS.

Frauenfeld, *Georg, Ritter von.* Zoologische Miscellen. Nos. 4–10. (Verh. d. Zool.-Bot. Ges. in Wien, 1865–66.) 8vo.
THE AUTHOR.

Fries, *Elias.* Systema Mycologicum. Voll. 1–3. 8vo. Lundæ et Gryphiswaldiæ, 1821–32.

—— Elenchus Fungorum. Voll. 2. 8vo. Ib., 1828.
F. CURREY, Esq., F.R.S., Sec. L.S.

Goureau, *Ch.* Les Insectes nuisibles à l'Homme, aux Animaux et à l'économie domestiques. 8vo. Paris, 1866. PURCHASED.

Grisebach, *A.* Catalogus Plantarum Cubensium, exhibens collectionem Wrightianam aliasque minores ex insula Cuba missas. 8vo. Lipsiæ, 1866. PURCHASED.

Günther, *A. C. L. G.* Record of Zoological Literature. Vol. 2. 8vo. London, 1866. PURCHASED.

Heiberg, *Peder,* Ed. Botanisk Tidskrift. See TRANSACTIONS, **Copenhagen.**

[**Henslow,** *Rev. J. S.*] Biographical Sketch of. (From the Gardeners' Chronicle.) 12mo. 1861. DR. HOOKER, V.P.L.S. &c.

Hildebrand, *Friedrich.* Die Geschlechter-Vertheilung bei den Pflanzen. 8vo. Leipzig, 1867. PURCHASED.

Hoffmann, *H.* Ueber den Flugbrand, Ustilago Carbo, Tul. (Uredo Segetum, Pers.). 8vo. (Berlin, 1866.) THE AUTHOR.

Hoffmann, *Hermann.* Zur Naturgeschichte der Hefe. (Karsten's Botan. Untersuchungen.) 8vo. THE AUTHOR.

Hofmann, *A. W.* Report on the Chemical Laboratories of the Universities of Bonn and Berlin. 4to. London, 1866.
COMMITTEE OF COUNCIL ON EDUCATION.

Hofmeister, *Wilh.,* **Bary,** *A. de,* **Irmisch,** *T.,* & **Sachs,** *J.* Handbuch der physiologischen Botanik. Band 1, Abth. 1. 8vo. Leipzig, 1867. PURCHASED.

Hogg, *John.* The Ballast-Flora of the coasts of Durham and Northumberland. (Ann. Nat. Hist., 1867.) 8vo. THE AUTHOR.

Hooker, *J. D.* Lecture on Insular Floras, delivered before the British Association for the Advancement of Science, at Nottingham, Aug. 27, 1866. 4to. THE AUTHOR.

Hooker, *J. D.,* Ed. Botanical Magazine. See **Journals.**

[**Hooker,** *Sir W. J.*] Biographical Sketch of. (Reprinted from Gardeners' Chronicle.) 12mo. 1865. DR. HOOKER, V.P.L.S.

Hutton, *Thomas.* Note on the Japan Silkworm. (Journ. Agric. and Hort. Soc. of India, Vol. 14, Part 3.) 8vo. 1866.
THE AUTHOR.

TITLES. DONORS.

Jenyns, *Leonard.* Phosphatic Nodules obtained in the Eastern Counties for Agricultural purposes. Lecture delivered to the Bath Natural History and Antiquarian Field Club, April 12, 1866. 8vo. Bath.

—— The Bath Flora. Lecture delivered to the Bath Natural History &c. Field Club, Dec. 5, 1866. 8vo. Ib.

THE AUTHOR.

Jones, *T. R.*, &c. Foraminifera of the Crag. See *Palæontographical Society.*

Jordan, *Alexis*, & **Fourreau,** *Jul.* Breviarium Plantarum novarum, Fasc. 1. 8vo. Parisiis, 1866. PURCHASED.

Junghuhn, *Fr.* Plantæ Junghuhnianæ, Fasc. 3. 8vo. Lugduni Batavorum, 1854. PURCHASED.

Kickx, *Jean.* Flore Cryptogamique des Flandres. 2 Tomes. 8vo. Gand &c., 1867. PURCHASED.

Knaggs, *H. G.*, Ed. Entomol. Monthly Mag. See **Journals.**

Kobell, *Franz von.* Die Urzeit der Erde. 8vo. München, 1856.

THE AUTHOR.

Kölliker, *Albert,* Ed. Zeitschrift f. wissensch. Zoologie. See **Journals.**

Koner, *W.* Heinrich Barth. 8vo. Berlin, 1866.

G. BUSK, Esq., F.R.S. &c.

Lankester, *Edwin,* Ed. Quart. Journ. Microsc. Science. See **Journals.**

Lartet, *Edouard,* & **Christy,** *Henry.* Reliquiæ Aquitanicæ. Parts 3 & 4. 4to. London, 1866–67.

THE EXECUTORS OF THE LATE H. CHRISTY, Esq.

Lawson, *H.*, Ed. Popular Science Review. See **Journals.**

Lemaire, *Ch.*, Ed. Illustration Horticole. See **Journals.**

Leveillé, *J. H.* Iconographie des Champignons. See **Paulet,** *J. J.*

Liebig, *Justus, Freih. von.* Die Entwicklung der Ideen in der Naturwissenschaft. 4to. München, 1866. THE AUTHOR?

Lilljeborg, *Wilh.* Bidrag till kännedomen om de inom Sverige och Norrige förekommande Crustaceer af Isopodernas underordning och Tanaidernas familj. 8vo.

—— Bidrag till kännedomen om Pterycombus Brama, B. Fries, en Fisk af Makrillfiskarnes Familj. 8vo. THE AUTHOR?

Lowe, *E. J.* Our Native Ferns; or a History of the British species and their varieties. Part 1 and Parts 14–28. 8vo. London, 1865–67. THE AUTHOR.

TITLES. DONORS.

Lowe, *E. J.*, & **Howard,** *W.* Beautiful-leaved Plants. Parts 15–20. 8vo. Ib., 1861. THE AUTHOR.

Lubbock, *Sir John.* On the Metamorphoses of Insects. 8vo. London, 1866. THE AUTHOR.

Mc Lachlan, *Robert.* Monograph of the British Psocidæ. (Entomol. Monthly Mag., Vol. 3.) 8vo. 1867. THE AUTHOR.

—— Ed. Entomol. Monthly Mag. See **Journals.**

Malmgren, *J. A.* Annulata Polychæta Spetsbergiæ, Grœnlandiæ, Islandiæ, et Scandinaviæ, hactenus cognita. 8vo. Helsingforsiæ, 1867. (c. 14 Tabb.) THE AUTHOR?

Martins, *Charles.* Mémoires sur les Racines aérifères, ou Vessies Natatoires des espèces aquatiques du genre Jussiæa. 4to. Montpellier, 1866. THE AUTHOR.

Martius, *C. F. Ph. von.* Akademische Denkreden. 8vo. Leipzig, 1866. THE AUTHOR.

—— Flora Brasiliensis, Fasc. 41–43. Fol. Ib., 1866–67. PURCHASED.

Miquel, *F. A. G.* Prolusio Floræ Japonicæ. Fasc. 1–5. Fol. Amstelodami, 1865–67. PURCHASED.

Miquel, *F. A. G.*, Ed. Annales Musei Botanici Lugduno-Batavi. Tom. 2, Fasc. 3–10. fol. Amstelodami &c., 1865–66. THE EDITOR.

Mohl, *H. von*, Ed. Botanische Zeitung. See **Journals.**

Montagu, *George.* MS. entitled "Vermes Mollusca," illustrated by a volume of original drawings by Mrs. E. D'Orville. H. D'ORVILLE, Esq.

Moore, *David*, & **More,** *A. G.* Contributions towards a Cybele Hibernica; being Outlines of the Geographical Distribution of Plants in Ireland. 8vo. Dublin, 1866. THE AUTHORS.

Munby, *G.* Catalogus Plantarum in Algeria sponte nascentium. Ed. 2. 8vo. Londini, 1866. THE AUTHOR.

Murray, *Andrew.* Geographical Distribution of Mammals. 4to. London, 1866. PURCHASED.

Nägeli, *Carl.* Entstehung und Begriff der naturhistorischen Art. 2te Auflage. 8vo. München, 1865. THE AUTHOR.

Napier, *C. O. G.* The Food, Use, and Beauty of British Birds. 12mo. London, 1865. THE AUTHOR.

Newman, *Edward*, Ed. Dictionary of British Birds. 8vo. London, 1866. THE EDITOR.

Newman, *Edward*, Ed. Entomologist and Zoologist. See **Journals.**

TITLES. DONORS.

Newton, *Alfred,* Ed. Ibis. See **Journals.**

Nielreich, *August.* Nachträge zur Flora von Nieder-Oesterreich. 8vo. Wien, 1866. ZOOL.-BOT. VEREIN, VIENNA.

Nitzsch, *C. L.* Pterylography; translated from the German. Edited by P. L. Sclater, M.A., Ph.D., &c. 4to. London, 1867. (Ray Soc. Publ.) PURCHASED.

Notaris, *Giuseppe de.* Elementi per lo studio delle Desmidiaceæ Italiche. 4to. Genova, 1867.

—— Cronaca della Briologia Italiana, parte 2. 8vo. Ib., 1867.

—— Pentimenti. 8vo. (Ib., 1867.) THE AUTHOR.

Nyman, *C. F.* Sylloge Floræ Europææ. 8vo. Œrebroæ, 1854–55. PURCHASED.

Parlatore, *Filippo.* Le Specie dei Cotoni. 4to. Firenze, 1866; and Tavole, fol. Ib., 1866.

THE ROYAL COMM^N FOR THE CULTIVATION OF COTTON IN ITALY.

Pasquale, *Gius. Ant.* Relazione sullo stato fisico-economico-agrario della Prima Calabria Ulteriore. 4to. Napoli, 1863.

—— Su di una novella Varietà di Dictamnus albus, L. (Annali dell' Accademia degli Aspiranti Naturalisti di Napoli, Serie 3, Vol. 2.) 8vo. Napoli, 1862.

—— Osservazioni sui Canali Resiniferi o Serbatoi della Resina degli Strobili dei Coniferi. (Ib., Serie 3, Vol. 3.) 8vo. Napoli, 1863.

—— Su di una nuova specie di Dianthus. (Ib., Serie 3, Vol. 4.) 8vo. 1864.

—— Poche Parole sul Feretro di Giovanni Gussone. (Estr. dalla Campania Industriale, 1866.) 4to.

—— Descrizione di una Anomalia del Polipodio volgare. 4to. Napoli, 1866. THE AUTHOR.

Paulet, *J. J.,* & **Leveillé,** *J. H.* Iconographie des Champignons. 4to. Paris, 1855. PURCHASED.

Peters, *W. C. H.,* **Carus,** *J. V.,* & **Gerstæcker,** *C. E. A.* Handbuch der Zoologie. Band 2. 8vo. Leipzig, 1863. PURCHASED.

Pfeiffer, *Louis,* Ed. Malakazool. Blätter. See **Journals.**

Planchon, *J. E.* Rondelet et ses Disciples; ou la Botanique à Montpellier au 16^e^ Siècle. 8vo. Montpellier, 1866.

—— Appendice par MM. J. E. et G. Planchon. 8vo. Ib., 1866. THE AUTHORS.

Pringsheim, *N.,* Ed. Jahrbuch für wissensch. Botanik. See **Journals.**

TITLES. DONORS.

Pritzel, *G. A.* Iconum Botanicarum Index locupletissimus. Pars altera. 8vo. Berlin, 1866. PURCHASED.

Quatrefages, *A. de.* Histoire Naturelle des Annelés marins et d'eau douce. 2 Tomes. 8vo. & Atlas. Paris, 1865. PURCHASED.

Ralph, *T. S.* Observations and Experiments with the Microscope on the Effects of various Chemical Agents on the Blood. 8vo. (Melbourne, 1866.) THE AUTHOR.

Ratzeburg, *J. T. C.* Die Waldverderbniss, oder der dauernde Schade, welcher durch Insektenfrass, Schälen, Schlagen, und Verbeissen, an lebenden Waldbäumen entsteht. Band 1. 4to. Berlin, 1866. PURCHASED.

Reeve, *Lovell.* Conchologia Iconica. Parts 250–263, and Monograph of Unio, Plates 1–30. 4to. London, 1865–67. PURCHASED.

Schlechtendal, *H. von,* Ed. Botanische Zeitung. See **Journals.**

Schneider, *Anton.* Monographie der Nematoden. 8vo. Berlin, 1866. PURCHASED.

Schultz-Bipontinus, *F. W. & C. H.* Pilosella, als eigene Gattung aufgestellt. 8vo. THE AUTHORS.

Schultze, *Max,* Ed. Archiv für mikroskop. Anatomie. See **Journals.**

Schur, *P. J. F.* Enumeratio Plantarum Transsilvaniæ. 8vo. Vindobonæ, 1866. PURCHASED.

Seemann, *Berthold,* Ed. Journal of Botany. See **Journals.**

[**Shortt,** *John.*] Report on Vaccination, throughout the Presidency and Provinces of Madras, in the year 1865. 8vo. Madras, 1866. DR. SHORTT, F.L.S.

Siebold, *C. T. von,* Ed. Zeitschrift für wissensch. Zoologie. See **Journals.**

Smith, *J. E.*, **Sowerby,** *James,* &c. English Botany. 3rd edition. By J. T. B. Syme, Mrs. Lankester, &c. Nos. 43–51. 8vo. London, 1866–67. The Publisher, R. HARDWICKE, Esq., F.L.S.

Snellen van Vollenhoven, *S. C.* Essai d'une Faune Entomologique de l'Archipel Indo-Néerlandais. Monogr. 1 & 2. (Scutellérides et Piérides.) 4to. La Haye, 1863–65. THE AUTHOR.

Sowerby, *G. B.* Thesaurus Conchyliorum. Parts 24 & 25. 8vo. London, 1866. PURCHASED.

TITLES.	DONORS.

Spencer, *Herbert.* Principles of Biology. 2 vols. 8vo. London, 1865–67. THE AUTHOR.

Stainton, *H. T.* The Tineina of Syria and Asia Minor. 8vo. London, 1867. THE AUTHOR.

Stainton, *H. T.*, Ed. Entomol. Monthly Mag. See **Journals.**

Stainton, *H. T.*, **Zeller,** &c. Natural History of the Tineina. Vol. 10, containing Gelechia, Part 2. 8vo. London, 1867. H. T. STAINTON, Esq., F.L.S.

Stevenson, *Henry.* Birds of Norfolk; with Remarks on their Habits, Migration, and Local Distribution. Vol. 1. 8vo. London, 1866. THE AUTHOR.

Tenore, *V.*, & **Pasquale,** *G. A.* Compendio di Botanica, ordinato specialmente alla conoscenza delle piante Medicinali più comuni. 2da edizione. 8vo. Napoli, 1858. PROF. PASQUALE.

Thozet, *A.* Notes on some of the Roots, Tubers, Bulbs, and Fruits used as ... Food by the Aboriginals of N. Queensland. 8vo. Rockhampton, 1866. THE AUTHOR.

Truman, *Edwin*, Ed. Archives of Dentistry. See **Journals.**

Vriese, *W. H. de*, &c., Ed. Nederlandsch Kruidkundig Archief. See **Journals.**

Wallich, *G. C.* The North Atlantic Sea-bed; comprising a Diary of the Voyage on board H.M.S. 'Bulldog,' in 1860. Part 1. 8vo. London, 1862. PURCHASED.

Waring, *E. J.* Manual of Practical Therapeutics, considered chiefly with reference to articles of the Materia Medica. 2nd Edition. Sm. 8vo. London, 1865. THE AUTHOR.

West, *Tuffen.* On the structure of the Seed in Solanaceæ, &c. (Report of International Horticultural Exhibition, &c., 1866.) 8vo. THE AUTHOR.

Westwood, *J. O.* On the date afforded by the Burchellian Collection, as to the Geographical and Modificational Ranges of certain Brazilian Insects. (Proc. Ashm. Soc., N. Ser., No. 1.) 8vo. THE AUTHOR.

Wiegmann, *A. F. A.*, Ed. Archiv für Naturgeschichte. See **Journals.**

Willkomm, *Mauritius.* Icones et Descriptiones Plantarum novarum, criticarum, &c., Europæ Austro-Occidentalis; præcipue Hispaniæ, Tom. 2, Fasc. 20. 4to. Lipsiæ. PURCHASED.

Willkomm, *Moritz.* Die mikroskopischen Feinde des Waldes. Heft 1. 8vo. Dresden, 1866. PURCHASED.

	TITLES.	DONORS.
Wimmer, *Fridericus.*	Salices Europææ. 8vo. Vratislaviæ, 1866.	PURCHASED.
Woodward, *Henry.*	British Fossil Crustacea.	See *Palæontographical Society.*
Woodward, *S. P.*	Manual of the Mollusca. 12mo. London, 1866.	

Original Drawings of seven species of Himalayan Birds, described by Edward Burton, Esq., a ta Meeting of the Zoological Society in October, 1835. EDWARD BURTON, Esq., F.L.S.

Photographic Portrait of M. A. De Candolle, F.M.L.S. MESSRS. WILSON AND BEDELL.

PROCEEDINGS

OF THE

LINNEAN SOCIETY OF LONDON.

(SESSION 1867-68.)

November 7th, 1867.

George Bentham, Esq., President, in the Chair.

The following Report on the Additions to the Library was read:—

Publications of the following foreign Academies or Societies have been received since the last meeting.

(Those marked * contain no paper on Zoology or Botany.)

DENMARK:—

Royal Danish Society of Sciences. Transactions (Oversigt over Forhandlinger) 1865, 1866, 1867. 1 to 3.

RUSSIA:—

Imperial Academy of Sciences, Petersburg. Mémoires x. 3 to 16, xi. 1 to 6; Bulletin x., xi., xii.

Entomological Society, Petersburg. Journal (Horæ) iii., iv.

Imperial Society of Naturalists, Moscow. Bulletin 1866. 3, 4.

ITALY:—

Royal Academy of Sciences, Turin. Memoirs, Ser. 2, xxii. Proceedings (Atti) i. 3 to 7, ii. 1 to 3.

Technical Institute of Palermo. Journal of Natural and Economical Sciences ii. 2 to 4.

DUTCH NETHERLANDS :—

Netherlands Entomological Society. Journal, Ser. 2, i. 1 to 6.

Leyden Botanical Museum. Annales, last parts of ii., and iii. 1 to 6.

BELGIUM :—

Royal Belgian Academy of Sciences etc. Mémoires xxxvi.; Bulletin xxii., xxiii.

Royal Society of Sciences, Liége. Mémoires, Ser. 2, i.

GERMANY :—

Royal Prussian Academy of Sciences. Proceedings (Monatsberichte) 1867, April to June.

Brandenburg Botanical Society. Transactions (Verhandlungen) vii., viii.

Horticultural Society of Berlin. Weekly Journal of Horticulture and Botany (Wochenschrift) 1867. 1 to 25.

Royal Physico-Economical Society, Kœnigsburg. Transactions (Schriften) 1865, 1866.

Royal Bavarian Academy of Sciences. Transactions of the Mathematico-Physical Class (Abhandlungen) x. 1; Proceedings (Sitzungsberichte) 1867 i., ii. 1.

Imperial Academy of Sciences, Vienna. *Proceedings.

Imperial and Royal Geological Society. *Annals (Jahrbücher) xvii. 1, 2.

FRANCE :—

Museum of Natural History, Paris. Nouvelles Archives i., ii., iii. 1, 2.

Imperial Academy, Lyons, Class of Sciences. Mémoires xiv., xv.

Linnean Society, Lyons. Annales xiv.

Imperial Agricultural Society, Lyons. Physical and Natural Sciences. Annales ix., x.

Society for Physical and Natural Sciences, Bordeaux. Mémoires iv. 1, v. 1.

SWITZERLAND :—

Physical and Natural History Society, Geneva. *Mémoires xix. 1.

Société Vaudoise of Natural Sciences, Lausanne. *Bulletin ix. 57.

Natural History Society, Zurich. Journal (Vierteljahrsschrift) 1864 to 1866.

ASIA :—

Asiatic Society of Bengal. Journal, Physical part 1867. 1, and Philological part 1866. 4, 1867. 1; *Proceedings.

Batavian Society of Arts and Sciences. *Transactions (Verhandelingen) xxxii.; *Proceedings (Notulen) ii., iii., iv. 1; *Journal for Indian Philology, Geography, and Ethnology (Tijdschrift) xiv. 5, 6, xv., xvi. 1.

Natural History Society for Netherlands' Indian Journal (Tijdschrift) iv. 1, 2.

AUSTRALIA :—

Royal Society of Victoria. Transactions viii. 1.

Acclimatization Society of New S. Wales. 6th Annual Report.

SOUTH AMERICA :—

Public Museum of Buenos Ayres. *Annals 2.

Scientific Association of Trinidad. Proceedings 2.

NORTH AMERICA :—

American Philosophical Society, Philadelphia. *Proceedings x. 76.

American Society of Arts and Sciences, Boston. Proceedings vii. pp. 97 to 104.

Boston Society of Natural History. Memoirs i. 1, 2; Proceedings, end of x., xi. pp. 1 to 96.

Essex Institute of Salem (accidentally omitted in the President's Address last May). Proceedings iv., v. 1, 2.

Lyceum of Natural History, New York. Annals viii. 11 to 14

Smithsonian Institution, Washington. Miscellaneous Collections vi., vii.; Annual Report for 1865.

Connecticut Academy for Arts and Sciences. *Transactions i. 1.

The papers contained in the foregoing Publications, as well as the separate works presented to, or purchased by, the Society since the last meeting, so far as they relate to Zoology or Botany, may be classed as follows.

(In this enumeration are not included the Transactions of our own Societies, or Journals or Serials exclusively devoted to either of these sciences or to branches of them, and regularly received by the Society, viz. Transactions and Proceedings of the Zoological, Entomological, and Microscopical Societies of London, Annals of Natural History (except the few Botanical articles), Zoologist,

Zeitschrift für wissenschaftliche Zoologie, Ibis, Journal de Conchyliogie, Malakozoologische Blätter, Conchologia Iconica, Entomologist, Entomologist's Monthly Magazine, Journal (Tijdschrift) of the Netherlands Entomological Society, Horæ Societatis Entomologicæ, Seemann's Journal of Botany, Botanische Zeitung, Flora, English Botany, Botanical Magazine, Illustration Horticole, Gardeners' Chronicle).

MAMMALIA AND GENERAL ZOOLOGY :—

H. Allen. Monograph of N. American Rats. Smithson. Misc. Coll. vii.

K. E. de Baer. Mammoth recently discovered in Siberia, 1 plate. Petersb. Bullet. x.

P. Bert. Locomotion in Animals. Bordeaux Mem. iv. 1 (suite.)

F. L. W. Bischoff. Skulls of a Gorilla and of a Chimpanzee. Munich Proceed. 1867.

——. New Observations on the development of the Guinea Pig, chiefly in reply to C. B. Reichert, 4 plates. Munich Trans. x. 1.

J. F. Brandt. Natural History of the Mammoth. Petersb. Bullet. x.

——. Former distribution and extinction of *Rhytina Stelleri*. Petersb. Bullet. xi.

——. Affinities of *Didus ineptus*. Petersb. Bullet. xi.

W. K. Bullmore. Cornish Fauna, 8vo ; presented by the Author.

M. Claudius. Organs of hearing in *Rhytina Stelleri*. Petersb. Mem. xi. 5.

P. Fischer. Genus *Ziphius* (Cetacea). Nouv. Arch. Mus. Par. iii.

T. Gill. Prodrome of a Monograph of Pinnipeda. Essex Instit. Proceed. v. 1.

Milne-Edwards. *Elaphurus Davidianus*, 3 plates. Nouv. Arch. Mus. Par. ii.

——. *Lophiomys*, a new family of Rodentia, 3 plates. Nouv. Arch. Mus. Par. iii.

Peters. South-west African Chiroptera and Amphibia, 1 plate. Berlin Proceed. Apr.

——. *Pteropus*. Berlin Proceed. May.

——. *Uromys*, a New Australian genus, 1 plate. Berlin Proceed. May.

——. Bats of the genera *Mimon* and *Saccopteryx*, 1 plate. Berlin Proceed. July.

R. G. Wilder. Morphology and Teleology, especially in the limbs of Mammalia. Boston Mem. i.

ORNITHOLOGY :—

J. A. Allen. Catalogue of Birds of Springfield, Mass. Essex Inst. Proceed. iv. 2, 3.

——. Duck-Hawk or American Falcon. Essex Inst. Proceed. iv. 5.

H. Bryant. Labrador Birds. Boston Soc. Proceed.

——. St. Domingo Birds. Boston Soc. Proceed.

M. Buller. Essay on the Ornithology of New Zealand, for the New Zealand Exhibition. Pamphlet.

E. Coues. Osteology and Myology of *Colymbus torquatus*, 1 plate. Boston Soc. Mem. i.

R. Germain. Catalogue Raisonné of Algerian Birds. Nouv. Arch. Mus. Par. i.

L. R. Gratiolet and P. H. E. Alix. Anatomy of *Troglodytes Aubryi*, 9 plates. Nouv. Arch. Mus. Par. ii.

G. N. Lawrence. New Birds from Central America, New York Lyc. Ann. viii.

Milne-Edwards. Report on David's Birds from Pekin, 5 plates. Nouv. Arch. Mus. Par. i.

Mulsant and Verreaux. A New Humming-bird. Lyons Linn. Soc. Ann. xiv.

H. v. Rosenberg. *Paradisea apoda* and new Birds from Aroe and Kei islands. Batav. Soc. Journ. iv.

J. Verreaux. New Birds in the Zoological Galleries at the Jardin des Plantes. Nouv. Arch. Mus. Par. ii., iii.

G. Zaddach. Contributions to Prussian Ornithology. Kœnigsb. Trans. 1866. 1.

ICHTHYOLOGY :—

A. Hannover. Origin and development of the scales and prickles of Cartilaginous Fish (Abstract). R. Dan. Soc. Trans. 1867. 1.

J. Reinhardt. Three new Brazilian Characina, 2 plates. R. Dan. Soc. Trans. 1865. 3.

Steenstrup. The species of *Rhombus* and *Zeugopterus*, wood-cuts. R. Dan. Soc. Trans. 1865. 3.

M. Wagner. Geographical distribution of, and (Kner and Steindachner) new genera and species of, Freshwater Fish from Central America, 6 plates. Munich Trans. x. 1.

REPTILES and BATRACHIA :—

E. Brandt. Ductus caroticus of Viviparous Lizards. Petersb. Bull. xi.

G. V. Ciaccio. Anatomy of the skin of *Rana esculenta*. Palermo Inst. Journ. ii.

A. Duméril. Reptiles of the Ménagerie of the Jardin des Plantes. Nouv. Arch. Mus. Par. i.

——. Monstrosity called Polymelia in Batrachia. Nouv. Arch. Mus. Par. i.

——. Reproduction of Axolotls. Nouv. Arch. Mus. Par. ii., and Ann. Sc. Nat. Ser. 5. vii.

——. Monstrosities in Axolotls. Nouv. Arch. Mus. Par. iii.

R. Hensel. Batrachia of S. Brazil. Wiegm. Arch. xxxiii.

Leydig. Wurtemberg Salamandrina. Wiegm. Arch. xxxiii.

Milne-Edwards. Bocourt's Siamese Reptiles, Batrachia, and Fish, 1 plate. Nouv. Arch. Mus. Par. ii.

A. Strauch. Synopsis of Crocodilida, 2 plates. Petersb. Mem. x. 13.

——. *Cyclodus*. Petersb. Bull. x.

ENTOMOLOGY :—

J. A. Allen. Foray of a colony of *Formica sanguinea* on a colony of Black Ant. Essex Institut. Proceed. iv. 5.

C. G. A. Brischke and G. Zaddach. Monograph of Lydidæ, 1 plate. Kœnigsb. Trans. 1865. 2.

Count Castelnau. Australian Coleoptera. Victoria R. Soc. Trans. viii.

E. Duseigneur. Silkworm Disease, Annual Reports. Lyons Imp. Agric. Soc. Ann. ix., x.

A. Gerstæcker. Insects of Zanzibar. Wiegm. Arch. xxxiii.

A. A. Grote and C. F. Robinson. Lepidopterological Contributions, 3 plates. New York Lyceum Ann. viii. 13.

A. Krohn. Presence of two glandular sacs in the cephalothorax of Phalangida. Wiegm. Arch. xxxiii.

J. L. Leconte. New N. American Coleoptera and lists of species. Smiths. Misc. Coll. vi.

D. Lentz. Supplementary list of Prussian Coleoptera. Kœnigsb. Trans. 1865. 2.

v. Liebig. Silkworm Disease. Munich Proceed. 1867 i. 3.

H. Loew and R. Osten Sacken. Monograph of N. American Diptera. Smiths. Misc. Coll. vi.

P. Millière. New Lepidoptera, 10 plates. Lyons Linn. Soc. Ann. xiv.

Mulsant. Monograph of Coccinellida. Lyons Imp. Acad. Mem. xv.

——. Monograph of Pentatomida, 2 plates. Lyons Linn. Soc. Ann. xiv.

—— and Rey. Monograph of Fossipeds. Lyons Soc. Imp. Agric. Ann. ix.

A. S. Packard, jun. Lepidoptera of Labrador. Bost. Soc. Proceed. xi. 2.

——. Notes on Zygænida, 2 plates. Essex Instit. Proceed. iv. 1.

F. Plateau. Muscular force of Insects. Brussels Bullet. xxii.

F. W. Putman. Habits of Humble Bees. Essex Instit. Proceed. iv. 3.

——. Humble Bees of New England. Essex Instit. Proceed. iv. 4.

J. Putzeys. On *Notiophilus* and *Amara*. Liége R. Soc. Trans. Ser. 2, i.

S. H. Scudder. Relation of fossil and living Neuroptera, 1 plate. Boston Mem. i.

J. J. Weir. Apterous Lepidoptera. Pamphlet, 12mo. Presented by the Author.

Lower Orders of Animals :—

A. Agassiz. Young stages of a few Annelida, 6 plates. New York Lyceum Ann. viii.

v. Beneden. Polyps of Belgian coasts, 19 plates and woodcuts. Brussels Mem. xxxvi.

F. de Filippi. Observations on the Marine Fauna between Gibraltar, Rio Janeiro, Batavia, Cochinchina, Japan, and China. Turin Proceed. i. 5, 7, ii. 3.

J. E. Gray. Synopsis of Starfish in the British Museum. 4to, 16 plates. Presented by the Author.

A. Hyatt. Observations on Polyzoa, 9 plates. Essex Instit. Proceed. iv. 8.

H. James-Clark. Anatomy and Physiology of *Trichodina Pediculus*, Ehrh., 1 plate. Boston Mem. i.

A. Kowalewsky. Anatomy of *Balanoglossus*, 3 plates. Petersb. Mem. x. 3.

——. Development of *Holothuria*, 5 plates. Petersb. Mem. x. 3.

——. Simple Ascidia, 3 plates. Petersb. Mem. x. 15.

E. v. Martens. E. Asiatic Echinoderms (continuation), 1 plate. Wiegm. Arch. xxxiii.

E. v. Martens. *Hemieuryale*, an intermediate genus between *Ophiura* and *Euryale*, 1 plate. Berlin Proc. July.

Owsjannikow and Kowalewsky. Development of *Holothuria*, 1 plate. Petersb. Mem. xi. 4.

A. S. Packard, jun. Invertebrate Fauna of Labrador, 2 plates. Boston Mem. i.

R. A. Philippi. Note on two Chilian Leeches. Wiegm. Arch. xxxiii.

De Quatrefages. Geographical distribution of Annelida. Nouv. Arch. Mus. Par. i.

E. Semper. Note on *Euplectella*. Wiegm. Arch. xxxiii.

A. E. Verrill. Polyps of the E. coast of the United States, 1 plate. Boston Mem. i.

——. Polyps of the N. Pacific Exploring Expedition, 4 plates. Essex Instit. Proceed. iv. 5, 7, v. 1 ; also Boston Soc. Proceed. x.

N. Wagner. Circulation of Blood in Tunicata. Petersb. Bull. x.

——. Organization and development of *Anceus*. Petersb. Bull. x.

MOLLUSCA :—

A. Agassiz. *Salpa Cabottii*, 2 plates. Bost. Soc. Proceed. xi. 2.

W. G. Binney. N. American Land and Freshwater Shells (continuation). Smiths. Misc. Coll. vii.

W. T. Blanford. Contributions to Indian Malacology (continuations). Asiat. Soc. Beng. Journ. 1866. 1, 1867. 1.

A. Brandt. Heart of Mollusca and Insects. Petersb. Bull. x.

Costa. Boring Animals. Turin Trans. xxii.

P. Fischer. Terebriporida, 1 plate. Nouv. Arch. Mus. Par. ii.

R. J. L. Guppy. Mollusca of Trinidad. Trinid. Scient. Assoc. Proceed. 2.

Dr. Hensche. Supplement to the Molluscan Fauna of Prussia. Kœnigsb. Trans. 1866. 1.

A. Hyatt. Parallelism between the stages of life in the individual and in the order in Tetrabranchiate Cephalopods. Boston Mem. i.

C. Isenkrahe. Anatomy of *Helicina titanica*, 1 plate. Wiegm. Arch. xxxiii.

H. Krebs. Notes on W.-Indian marine Shells described by W. B. Adams. New York Lyc. Ann. viii.

C. Möbius. Origin of the sounds produced by *Palinurus vulgaris*, 1 plate. Wiegm. Arch. xxxiii.

E. S. Morse. Classification of Mollusca on the principle of Cephalization. Essex Instit. Proceed. iv. 6.

P. Owsjannikow and A. Kowalewsky. Central nervous system and organs of hearing in Cephalopods, 5 plates. Petersb. Mem. xi. 3.

J. Prime. Monograph of American Corbiculada. Smiths. Misc. Coll. vii.

W. Stimpson. Hydrobiina and allied forms. Smiths. Misc. Coll. vii.

P. Strepanoff. Genital organs and development of *Ancylus fluviatilis*, 1 plate. Petersb. Mem. x. 8.

T. H. Troschel. On the genus *Cremnobates*, Blanf., 1 plate. Wiegm. Arch. xxxiii.

Crustacea, Arachnida, etc.:—

Milne-Edwards. On Cancerida, 9 plates. Nouv. Arch. Mus. Par. i.

F. Plateau. *Argyroneta aquatica*. Brussels Bullet. xxiii.

F. Terby. Means employed by Spiders in connecting distant points. Bruss. Bullet. xxiii.

Phænogamic Botany:—

C. C. Babington. Manual of British Botany, 5th and 6th editions. Presented by the Author.

C. Bänitz. On the Flora of Poland. Kœnigsb. Trans. 1865. 2.

Bentham and Hooker. Genera Plantarum, Part 3. Presented by the Authors.

E. Boissier. Flora Orientalis, 8vo, vol. 1. Purchased.

A. de Candolle. Lois de la Nomenclature Botanique. Presented by the Author.

F. Caruel. Organogeny of the female flower of *Carex*, 1 plate. Ann. Sc. Nat. Par. vii.

J. W. H. Cordes. *Pinus* species in the Southern Hemisphere. Batav. Soc. Journ. iv.

Heidenreich. Tilsit plants, especially hybrids. Kœnigsb. Trans. 1865. 1.

N. Kauffman. *Pistia texensis*, Kl., 1 plate. Petersb. Mem. xi. 2.

L. Kühling. Bromberg plants. Kœnigsb. Trans. 1866. 1.

C. Lucas. Konitz Flora. Kœnigsb. Trans. 1866. 2.

J. Macoun. New Canadian Carices. Canad. Nat. and Geol. iii. 1.

H. Mann. Enumeration of Hawaïan Plants. Amer. Soc. Arts Sc. Proceed. vii.

Maximowitz. E. Asiatic Rhamneæ, 1 plate. Petersb. Mem. x. 11.

——. Revision of Hydrangeæ, 3 plates. Petersb. Mem. x. 16.

——. Japanese and Mandschurian Plants, 4 decades. Petersb. Bullet. x., xi.

Meissner. Geographical Distribution of Laurineæ. Munich Trans. x. 1.

Miers. Revision of Menispermaceæ (conclusion). Ann. Nat. Hist. xx.

Miquel. Prolusio floræ Japonicæ (continuation). Ann. Mus. Lugd.-Bat. iii.

——. Various contributions to the flora of the Eastern Archipelago. Ann. Mus. Lugd.-Bat. iii.

Nägeli. On Piloselliform Hieracia. Munich Proceed. 1867 i. 1, 4.

C. A. I. A. Oudemans. Violaceæ. Ann. Mus. Lugd.-Bat. iii.

Regel. On *Pleuroplitis* (Gramineæ), 1 plate. Petersb. Bullet. x.

——. Index Seminum Horti Petropolitani, with descriptions of species. Presented by the Author.

—— and Herder. Semenow's South-east Siberian plants. Moscow Bullet. 1866.

Count Robert. *Saxifraga florulenta.* Turin Proceed. i. 3.

E. J. Ruprecht. Review of Caucasian Campanulaceæ. Petersb. Bullet. xi.

F. Seydler. Plants of the province Prussia. Kœnigsb. Trans. 1866. 2.

Teijsmann and Binnendik. New plants from the Eastern Archipelago, 1 plate. Batav. Soc. Journ. iv.

Tinné, J. A. Plantæ Tinneanæ, 1 vol. folio, 27 plates. Presented by the Author.

Trautvetter. Schrenck's Songarian Plants. Moscow Bullet. 1866.

——. Radde's Caucasian Plants. Petersb. Bull. x.

VEGETABLE PHYSIOLOGY ETC.:—

P. Bert. Motions of *Mimosa pudica.* Bordeaux Mem. iv. 1.

Caspary. Self-fecundation of Hermaphrodite Plants. Kœnigsb. Trans. 1865 i.

A. Famintzin. Action of light on *Spirogyra orthospira*, on the movements of some *Oscillatoria*, and on the coloration of leaves;

and Distribution of chlorophyll in the leaves of *Mnium*. Petersb. Bullet. x., xi.; reproduced in Pringsh. Jahrb. vi. with 3 plates, and in Bot. Zeit.

Th. Geyler. Bundles of vessels in the leaf-regions of Conifers, 6 plates. Pringsh. Jahrb. vi.

K. W. v. Gorkom. Cinchona-cultivation in Java, Report for 1865. Batav. Soc. Journ. iv.

G. Inzenga. Gum-disease in *Citri*. Palermo Instit. Journ. ii.

Kareltschikoff. Development of Stomata. Moscow Bullet. 1866.

Naudin. Hybridity in vegetables, 9 plates. Nouv. Arch. Mus. Par. i.

O. Nicolai. Growth, development, and anatomy of roots. Kœnigsb. Trans. 1865 i.

A. Petounnikow. Cuticulum of Plants. Moscow Bullet. 1866.

E. Prillieux. Vegetation of Orchids, 5 plates. Ann. Sc. Nat. Par. vii.

A. Trécul. Vessels of Araliaceæ. Ann. Sc. Nat. Par. vii.

——. Vessels of Terebinthineæ. Ann. Sc. Nat. Par. vii.

M. Woronin. Excrescences on roots of *Alnus glutinosa* and *Lupinus mutabilis*, 2 plates. Petersb. Mem. x. 6; copied, with 1 plate, in Ann. Sc. Nat. Par. vii.

CRYPTOGAMIA :—

Bommer. Monographie des Fougères, 8vo, Part 1. Presented by the Author.

W. Dönitz. Movements in the Plasmodia of *Æthalium septicum*. Berlin Proceed. July.

J. E. Duby. Choix de Cryptogames Exotiques, 1. Mousses, 4 plates, 4to. Presented by the Author.

A. Famintzin and J. Baranetzki. Development of Gonidia and formation of Zoospores in *Physcia parietina*. Petersb. Bullet. xii.

G. Inzenga. New Sicilian Fungi. Palermo Instit. Journ. ii.

Leighton. Notulæ Lichenologicæ (2 continuations). Ann. Nat. Hist. xx.

H. Mueller. Species and intermediates in Mosses. Brandenb. Bot. Soc. Trans. 1866.

J. Mueller. Development of the capsules of *Ephemerum*. Pringsh. Jahrb. vi.

De Notaris. Italian Hepaticæ, 5 plates. Turin Trans. xxii.

A. S. Œrsted. Organs of fructification in epiphyllous Fungi, 2 plates. R. Dan. Soc. Trans. 1865. 1.

A. S. Œrsted. Experiments by which was proved the identity of *Podisoma juniperinum* and *Rœstelia cornuta*, double plate. R. Dan. Soc. Trans. 1866. 5.

M. Reess. Development of the summits of Equisetum stems, 2 plates. Pringsh. Jahrb. vi.

Dr. Ripart. Organization of *Inomeria*, Kütz. (Algæ), 2 plates. Ann. Sc. Nat. Par. vii.

E. Roze. Antherozoids of Cryptogams, 1 plate. Ann. Sc. Nat. Par. vii.

W. W. Spicer. Collector's Handbook for Algæ etc. Presented by the Author.

Miscellaneous Subjects :—

Daubeny. Miscellanies, 2 vols. 8vo. Presented by the Author.

v. Martius. Brazilian Ethnography (Beiträge zur Ethnographie und Sprachkunde Amerikas zumahl Brasiliens), 2 vols. 8vo. Presented by the Author.

In Palæontology there have been received the Journals of Geological and Palæontological Societies, besides numerous Memoirs contained in the above quoted Transactions. Although, since the connexion between extinct and recent races is so much studied, these works are becoming daily more valuable in our library, yet they are not here specially enumerated, as not being at present the direct object of our labours. It may be mentioned, however, that one subject upon which we have had some recent communications has been further illustrated by G. Berend's paper on the situs and extraction of Amber. Kœnigsb. Trans. 1866. 1.

Of Older works there have been added to our library :—

Pallas. Zoographia, 3 vols. 4to. Purchased.

Seringe. Mélanges Botaniques, 1 vol. 8vo; and Collection de Mémoires, 1 vol. 4to. Presented.

Turton's Linnæus, 7 vols. 8vo. Purchased.

Dr. Campbell, F.L.S., exhibited a beautiful series of drawings of Indian plants, executed by Mrs. J. Ashburner.

The following papers were read, viz. :—

1. "Catalogue of the Reptiles of British Birmah, embracing the Provinces of Pegu, Martaban, and Tenasserim;" by W. Theobald, Jun., Esq. Communicated by George Busk, Esq., Sec. L.S.

2. "Descriptions of 50 new Species of the genus *Stigmodera*," by Edward Saunders, Esq. Communicated by W. W. Saunders, Esq., V.P.L.S.

November 21st, 1867.

George Bentham, Esq., President, in the Chair.

William Henry Spencer, Esq., was elected a Fellow.

The following Report on the additions to the Library was read:—

The publications of Scientific Bodies received since the last meeting have been the following.

SWEDEN:—

University of Lund. Transactions (Årskrift or Acta) for 1865. Mathematics and Natural History.

CANADA:—

Canadian Institute. Journal ix. n. 65. Sept. 1867.

GREAT BRITAIN:—

Devonshire Association. Report and Transactions ii. part 1.

London Geological Society. Journal, No. 92.

—— Royal Institution. Proceedings v. part 2.

—— Royal Society. Philosophical Transactions clvi. parts 1 and 2, clvii. part 1.

Northumberland and Durham Natural History Transactions i. part 3.

The zoological and botanical papers contained in the above, and the separate works added to the library, are as follows.

MAMMALOGY and GENERAL ZOOLOGY:—

W. Fox. On the development of striated muscular fibre, 2 plates. Philos. Trans. clvi. 1.

L. Lortet. On the rapidity of the flow of blood in the arteries of the Horse, 1 plate. Ann. Sc. Nat. Par. Ser. 5, vii.

A. Milne-Edwards. Observations on some Mammifera of N. China. Ann. Sc. Nat. Par. ser. 5, vii.

A. Milne-Edwards and Grandidier. Anatomical Observations on some Mammifera of Madagascar, 4 plates. Ann. Sc. Nat. Par. Ser. 5, vii.

M. V. Odenius. Contributions to the knowledge of the structure of the hairs of whiskers (pilitactus, mystaces et supercilia). Lund Trans. 1865.

H. Wahlgren. On the zoological establishment of the University of Lund. Lund Trans. 1865.

ORNITHOLOGY :—

The Ibis, New Ser. iii. 12. October 1867. Purchased.

A. Hancock. Ornithological Notes. Northumb. and Durh. Trans. i. 3.

W. K. Parker. On the structure and development of the skull in the Ostrich tribe, 9 plates. Philos. Trans. clvi. 1.

ICHTHYOLOGY :—

Baudelot. On a phenomenon in Fish comparable to moulting. Ann. Sc. Nat. Par. Ser. 5, vii.

P. Bert. On the death of saltwater Fish when plunged in fresh water. Ann. Sc. Nat. Par. Ser. 5, vii.

——. On some points in the physiology of the Lamprey. Ann. Sc. Nat. Par. Ser. 5, vii.

MOLLUSCA :—

W. Hincks. Molluscous animals. General considerations. Canada Inst. Journ. xi.

CRUSTACEA and ARANEIDA :—

A. M. Norman and G. S. Brady. Monograph of Entomostraca of the families Bosminidæ, Macrothricidæ, and Lynceidæ, 6 plates. Northumb. and Durh. Trans. i. 3.

F. Plateau. Observations on *Argyroneta aquatica*, 1 plate. Ann. Sc. Nat. Ser. 5, vii.

ENTOMOLOGY :—

J. J. Bold. Local Homoptera (continued). Entomological notes for 1866; and Coleopterous insects added to the Fauna of Northumberland and Durham. Northumb. and Durh. Trans. i. 3.

LOWER ORDERS OF ANIMALS :—

C. Bastian. On the Anatomy and Physiology and zoological position of the Nematodes, parasitic and free, 7 plates. Philos. Trans. clvi. 2.

W. B. Carpenter. On the structure, development, and physiology of *Antedon* (*Comatula*, Lam.) *rosaceus*, 13 plates. Philos. Trans. clvi. 2.

A. Hancock. Note on Excavating Sponges, with four new species, 2 plates. Northumb. and Durh. Trans. i. 3.

Hesse. On the motives which guide Echinodermata in hollowing out the cavities in rocks in which they lodge themselves. Ann. Sc. Nat. Par. Ser. 5, vii.

E. Parfitt. The Annelids of Devon. Devonsh. Assoc. Trans. ii. 1.

A. Quennerstedt. Contributions to the Infusorial fauna of Sweden, 2 plates. Lund Trans. 1865.

Systematic and Descriptive Botany:—

Hooker's Icones Plantarum, new Series, part 1. Presented by the President.

Vegetable Physiology:—

E. Parfitt. On the Parasitism of *Orobanche major*, 1 plate. Devonsh. Assoc. Trans. ii. 1.

Cryptogamic Botany:—

S. Berggren. Contributions to the Bryology of Scandinavia, 1 plate. Lund Trans. 1865.

O. Nordstedt. Observation on the germination of Characeæ. Lund Trans. 1865.

Miscellaneous:—

C. Daubeny. On the temperature of the Ancient World. Pamphlet. Presented by the Author.

H. Denny. Five Palæontological papers. Presented by the Author.

J. L. Soubeiran. On the acclimatization of Cinchonas.

——. On pisciculture in Norway.

——. On the Oyster-fishery at Tinnevelly.

La production Animale et Végétale, by the Imperial Society of Acclimatization at Paris. All presented by M. Soubeiran.

Mr. Ward, F.L.S., exhibited dried specimens of a few British plants, illustrating the influence of climate and local conditions in altering their character and appearance.

Dr. Braithwaite, F.L.S., exhibited two mosses, new to this country (*Amblystegium confervoides* and *Hypnum Bambergeri*), discovered by Dr. Fraser of Wolverhampton.

Mr. Hanbury, F.L.S., exhibited specimens of the fruit of

Amomum Clusii, ripened, as he believed, for the first time in Britain.

The following Papers were read, viz. :—

1. "On the *Fagus Castanea* of Loureiro's Flora Cochinchinensis; with descriptions of two new Chinese *Corylaceæ*;" by H. F. Hance, Ph.D. &c. Communicated by J. D. Hooker, M.D., V.P.L.S. &c.

2. "Note on *Isoëtes capsularis*, Roxb.;" by John Scott, Curator, Botanic Garden, Calcutta. Commmunicated by Thomas Anderson, M.D., F.L.S. &c.

3. "Synopsis of the South African *Restiaceæ*;" by Maxwell T. Masters, M.D., F.L.S. &c.

4. "Notes on the Flora of North-east Tasmania;" by Walter K. Bissill, Esq. Communicated by Ferdinand Müller, M.D., F.R. & L.SS.

5. "On the Branched Palms in Southern India;" by S. Pulney Andy, M.D., F.L.S.

6. "Observations on *Thlaspi alpestre*, L.;" by John Windsor, Esq., F.L.S.

December 5th, 1867.

George Bentham, Esq., President, in the Chair.

Charles Baron Clarke, Esq., Francis Elliott Kitchener, Esq., and the Rev. Thomas Powell, were elected Fellows.

The following Report, on the Additions to the Library since the last meeting, was read :—

The Publications of Scientific Bodies received since the last meeting have been the following :—

Russia :—

Entomological Society, Petersburg. Journal (Horæ) v. 1, 2.
Society of Naturalists, Moscow. Bulletin 1867. 1.

Austria :—

Imperial Academy of Sciences, Vienna. Transactions (Denkschriften) xxvi. ; Proceedings (Sitzungsberichte) liv. 4, 5, lv. 1, 2.
(Besides the biological papers enumerated below, these publications contain several copiously illustrated palæontological memoirs).
Imperial Geological Institute (Reichsanstalt). *Transactions (Verhandlungen) 1867. 10–12 ; *Journal (Jahrbuch) 1867 xvii. 3.

Great Britain and Ireland :—

Royal Dublin Society. Journal v. 36.
Royal Geographical Society. *Proceedings xi. 6.
Pharmaceutical Society. Journal, Ser. 2, ix. 6.
Zoological Society. Transactions vi. 4; Proceedings 1867. 2

The December numbers of various periodicals and serials taken in by the Society have also been laid on the table.

The papers in recent biology contained in the above, and the separate works added to the Library, are as follows :—

Mammmalogy and General Zoology :—

F. Brandt. Additional note on the extinction of the *Rhytina*. Mosc. Bullet. 1867. 1.
H. Burmeister. Anatomy of *Pontoporia Blainvillii*, woodcuts. Zool. Soc. Proceed. 1867. 2.

L. R. Gratiolet and P. H. E. Alix. Anatomy of *Troglodytes Aubryi*, 9 plates. Nouv. Arch. Mus. Par. ii. (entered by mistake under Ornithology, above, p. v).

J. E. Gray. Synopsis of American Squirrels and of Burrowing Squirrels in the British Museum. Ann. Nat. Hist. Ser. 3, xx.

——. On the skulls of *Felidæ*; on the *Felidæ* of the British Museum, 2 plates; on a new *Lemur*, 1 plate; on variegated Australian Rats. Zool. Soc. Proceed. 1867. 2.

H. v. Heuglin and L. J. Fitzinger. Systematic review of the Mammalia of N.E. Africa. Vienna Acad. Proceed. liv.

E. Hering. Structure of the Liver in Vertebrata, 1 plate. Vienna Acad. Proceed. liv.

E. S. Hill. Reproduction of Kangaroos. Zool. Soc. Proceed. 1867. 2.

G. Krefft. Two new Rodents from Cape York, woodcuts. Zool. Soc. Proceed. 1867. 2.

A. Lipsky. On the finer structures of the intestinal canal. Vienna Acad. Proceed. lv.

A. Macalister. Anatomy of *Globiocephalus Svineval*. Zool. Proceed. 1867. 2.

St. G. Mivart. On the skeleton of Primates, part 1, 9 plates. Zool. Soc. Trans. vi. 4.

——. On the skull of *Indris diadema*. Zool. Soc. Proceed. 1867. 2.

J. Murie. On the death of the Sea-Bear; on the dermal and visceral structure of the Kagu. Zool. Soc. Proceed. 1867. 2.

J. L. Schenck. Origin and development of the heart in the embryo (specially observed in the chicken). Vienna Acad. Proceed. liv.

Ornithology:—

J. Gould. A new Australian Malurus. Zool. Soc. Proceed. 1867. 2.

T. H. Huxley. Classification of Birds. Zool. Soc. Proceed. 1867. 2.

G. Krefft. A new Cassowary from Northern Queensland. Zool. Soc. Proceed. 1867. 2.

F. M'Coy. A new Victorian Honey-eater. Ann. Nat. Hist. Ser. 3, xx.

J. Murie. Tracheal pouch of the Emu. Zool. Soc. Proceed. 1867. 2.

E. Newton. Birds of the Seychelles Islands, 1 plate. Zool. Soc. Proceed. 1867. 2.

E. P. Ramsay. Nidification of *Baza subcristata*. Zool. Soc. Proceed. 1867. 2.

A. v. Pelzeln. Zoology of the voyage of the Novara. Birds. 4to, 6 plates. Purchased.

P. L. Sclater. Birds of Chili; Birds of Peru, 2 plates. Zool. Soc. Proceed. 1867. 2.

—— and O. Salvin. Wickham's Birds of Blewfield's River, Mosquitia; Wallace's Birds of the Lower Amazon and Rio Negro, 2 plates. Zool. Soc. Proceed. 1867. 2.

Icthyology :—

F. Day. Indian Fishes, 4 papers. Zool. Soc. Proceed. 1867. 2.

R. Kner. Zoology of the voyage of the Novara, 4to. Fishes, part 3, 5 plates. Purchased.

——. Considerations on the Ganoidei as a natural order. Vienna Acad. Proceed. liv.

F. Steindachner. On some fish from the Fitzroy River, near Rockhampton, Queensland, 1 plate and woodcuts. Vienna Acad. Proceed. lv.

Reptiles and Batrachia :—

J. E. Gray. The Lizards of Australia and New Zealand in the British Museum, 4to, 18 plates. Presented by the Author.

——. Synopsis of recent Crocodilians, 4 plates. Zool. Soc. Trans. vi. 4.

H. Rathke. Researches (Untersuchungen) on the development and structure of the Crocodile, posthumous work, edited by W. v Wittich, 4to, 10 plates. Purchased.

F. Steindachner. Zoology of the Voyage of the Novara, 4to. 'Reptiles, 3 plates; Amphibia, 5 plates. Purchased.

——. Herpetological notes, with new genera and species, 4 plates. Vienna Acad. Proceed. lv.

Entomology :—

A. Becker. Insects of Astracan and Sarepta (short note). Mosc. Bullet. 1867. 1.

A. G. Butler. Descriptions of Asiatic Lepidoptera and American Satyridæ, 3 plates. Ann. Nat. Hist. Ser. 3, xx.

E. R. Crotch. Coleoptera of the Azores. Zool. Soc. Procced. 1867. 2.

C. and R. Felder. Zoology of the voyage of the Novara, 4to. Lepidoptera, part 2, 26 plates. Purchased.

V. Graber. Development and powers of reproduction of Orthoptera, 4 plates. Vienna Acad. Proceed. lv.

Horæ Societatis Entomologicæ Rossicæ v. 1, 2.

G. L. Mayr. Zoology of the Voyage of the Novara, 4to. Formicidæ, 4 plates. Purchased.

V. Motchulsky. Coleoptera, 5th article. Mosc. Bullet. 1867. 1.

H. de Saussure and J. Sichel. Zoology of the voyage of the Novara, 4to. Hymenoptera, 4 plates. Purchased.

C. Suffren. Gundlach's Cuban Chrysomelidæ. Wiegm. Archiv xx.

Crustacea, Arachnida, etc. *:—

C. Heller. Amphipoda of the Adriatic Sea, 4 plates. Vienna Acad. Trans. xxvi.

Mollusca :—

A. Adams. New shells from Japan. Zool. Soc. Proceed. 1867. 2.

H. Adams. New shells from Mauritius, and some others, 1 plate to the above two papers. Zool. Soc. Proceed. 1867. 2.

W. Baird and H. Adams. Chinese shells, 1 plate. Zool. Soc. Proceed. 1867. 2.

Malakozoologische Blätter for May to Oct. 1867. Purchased.

Lower Orders of Animals :—

J. S. Bowerbank. On *Hyalonema mirabile*; on *Alcyoncellum speciosum*. Zool. Soc. Proceed. 1867. 2.

J. E. Gray. Arrangement of Sponges and new Genera, 2 plates. Zool. Soc. Proceed. 1867. 2.

Phænogamic and General Botany :—

J. G. Baker. North Yorkshire, its Botany, Geology, Climate, and Physical Geography, 4 maps, 8vo. Purchased.

F. Boott. Illustrations of the genus *Carex*, part iv., completing the total number of 600 plates, folio. Presented by Mrs. Boott.

A. de Candolle. Lois de la Nomenclature Botanique. Pamphlet, 8vo. Presented by the Author.

F. v. Herder. Radde's Monopetalæ (continuation). Mosc. Bullet. 1867. 1.

E. Lees. Botany of Worcestershire, 8vo, with a map. Presented by the Author.

* In the first sheet of these Proceedings, the papers under the heads Crustacea and Mollusca have been accidentally transposed from p. vii, where they should have been inserted.

E. Regel and F. v. Herder. Enumeration of Semenow's Cis- and Trans-Ilian plants, 1 plate. Mosc. Bullet. 1867. 1.

G. Schweinfurth. Contribution (Beitrag) to the Flora of Æthiopia, part 1, 4to, 4 plates. Purchased.

Vegetable Physiology :—

C. A. Cameron. On the substitution of Rubidia for potash in plants. R. Dubl. Soc. Journ. v. n. 36.

A. Petounnikow. Note on the cuticle and on the secreting organs of Plants. Mosc. Bullet. 1867. 1.

J. R. Schnetzler. Aëriferous vesicles of Utriculariæ. Ann. Nat. Hist. Ser. 3, xx.

Cryptogamic Botany :—

A. Fischer v. Waldheim. On the structure of the spores of Ustilagineæ, 1 plate. Mosc. Bullet. 1867. 1.

Milde. Filices Europæ et Atlantidis Asiæ minoris et Sibiriæ, including a monograph of some Osmundæ, Botrychia, and Equiseta, 8vo. Purchased.

W. A. Leighton. Notulæ Lichenologicæ (continuation). Ann. Nat. Hist. Ser. 3, xx.

Miscellanea :—

J. Haast. Geological Report on the headwaters of the river Rakaia, New Zealand. 20 illustrations and map; foolscap folio. Presented by the Author.

Mr. Currey, Sec. L.S., exhibited a remarkable monstrosity of *Plantago major*, with the flowering spikes repeatedly branched; found by Mr. G. B. Wollaston at Compton, in Sussex.

Mr. T. B. Flower, F.L.S., exhibited specimens, in fruit, of the *Garrya elliptica*, ripened in a garden at Bath.

The following papers were read, viz. :—

1. "A Contribution to the Knowledge of the Lower Annelids," by E. Ray Lankester, Esq. Communicated by George Busk, Esq., Sec. L.S.

2. "On the Spiny Lizard (*Moloch horridus*)," by G. A. Wilson, Esq., F.L.S.

December 19th, 1867

George Bentham, Esq., President, in the Chair.

James Robertson, Esq., was elected a Fellow.

The following Report, on the Additions to the Library, was read:—

The Publications of the Scientific Bodies received since the last meeting have been the following:—

Dutch Netherlands:—

Royal Academy of Sciences, Amsterdam. *Reports and Memoirs (Verslagen en Mededeelingen) Literature x.; *Proceedings (Processen-verbaal and Jahrboek).

Germany:—

Senckenberg Natural-History Society, Frankfort. Transactions (Abhandlungen) vi. parts 3 and 4.

Imperial Academy of Sciences, Vienna. *Proceedings.

Asia:—

Government Observatory, Bombay. *Magnetical and Meteorological Observations for 1864.

South America:—

Public Museum of Buenos Ayres. *Annals part 4. (Continuation of Burmeister's paper on fossil Animals.)

Great Britain:—

Geological Society. *Quarterly Journal xxiii. Supplement.

Royal Medical and Chirurgical Society. *Transactions l.

The Journal of the Linnean Society, Zoology ix. n. 38, published since the last meeting, was laid on the table; as also the current numbers of Seemann's Journal of Botany, the Botanische Zeitung and the Flora, purchased.

The papers in recent biology contained in the above, and the separate works added to the Library, are as follows:—

General Zoology:—

C. Bruch. Researches on the development of Animal Tissue, 6 plates. Senckenb. Nat. Hist. Soc. Trans. vi.

A. Günther. Record of Zoological Literature iii. 1866. Purchased.

M. Landzert. The sphenoidal angle (Sattelwinkel) of the skull and its relation to Pro- and Orthognathy, 3 plates. The skulls of Great-Russians, 8 plates. Senckenb. Nat. Hist. Soc. Trans. vi.

ENTOMOLOGY:—

H. W. Bates. Catalogue of Erycinidæ (Diurnal Lepidoptera). Journ. Linn. Soc. Zool. ix.

F. Jaennicke. New exotic Diptera, 2 plates. Senckenb. Nat. Hist. Soc. Trans. vi.

R. Spruce. Insect- and other migrations in Equatorial America. Journ. Linn. Soc. Zool. ix.

M. Willkomm. See Cryptogamic Botany.

LOWER ANIMALS:—

A. Hancock. Anatomy and Physiology of Tunicata. Journ. Linn. Soc. Zool. ix.

PHÆNOGAMIC AND GENERAL BOTANY:—

C. C. Babington. On *Aster salignus*. Seem. Journ. Bot. v.

H. F. Hance. On *Calimeris*, Nees, and *Heteropappus*, Less. Seem. Journ. Bot. v.

W. B. Hemsley. Distribution of British Umbelliferæ. Seem. Journ. Bot. v.

S. Kurz. *Ammania pygmæa*, a new species. Seem. Journ. Bot. v.

F. Schultz. On the names of species, varieties, and bastards, and on some new (critical) species. Flora 1867.

B. Seemann. Revision of Bignoniaceæ (continued). Seem. Journ. Bot. v.

VEGETABLE PHYSIOLOGY:—

A. W. Eichler. A new instance of a polycotyledonous embryo (in *Psittacanthus*, Mart., Loranthaceæ). Flora 1867.

Dr. Holzner. Crystal glands in the leaves of *Morus alba*. Bot. Zeit. 1867.

A. Kirchnoff. Organic analogy of phanerogamic and cryptogamic flowers. Bot. Zeit. 1867.

W. Uloth. Formation of Wax in the vegetable kingdom, 1 plate. Flora 1867.

CRYPTOGAMIC BOTANY:—

H. Hoffmann. On *Saprolegnia* and *Mucor*, 1 plate. Bot. Zeit. 1867.

Müller Arg. New Lichens. Flora 1867.

W. Nylander. Addenda to the Lichenology of New Zealand. Flora 1867.

W. G. Smith. Artificial production of *Agaricus Loveianus*. Seem. Journ. Bot. v.

Count Solms-Laubach. On *Vaucheria dichotoma*, DC. Bot. Zeit. 1867.

M. Willkomm. The microscopical Enemies of the Forest (Fungi and Insects). 8vo, part 2, 6 plates and woodcuts. Purchased.

Dr. Hooker, V.P.L.S., exhibited an extensive series of Japanese *Coniferæ*, and made some observations upon them, pointing out their affinity with Indian and North American forms.

Mr. George Maw, F.L.S., exhibited a living specimen, in flower, of the *Porana racemosa*, which he had succeeded in raising from seeds communicated to him by Dr. Wight, by whom that species was originally described, from specimens gathered on the eastern slopes of the Neilgherries. The living plant was accompanied by a fossil from the Tertiary beds, which was stated to have been identified by Dr. Heer with the genus *Porana*.

Mr. W. G. Smith exhibited a beautiful series of drawings of British *Fungi*.

Mr. W. H. Ince, F.L.S., exhibited a specimen, in spirit, of the Spiny Lizard of South Australia (*Moloch horridus*), which had been tamed by his brother, the late Captain J. M. R. Ince, R.N., and was in the habit of eating out of his hand.

The following papers were read, viz. :—

1. "On the true *Fuchsia coccinea* of Aiton," by J. D. Hooker, M.D., F.R.S., V.P.L.S.

2. "Note on the stigmatic apparatus of *Goodenoviecæ*," by George Bentham, Esq., F.R.S., Pres. L.S.

3. The continuation of "Notes on the structure of Myrtaceæ," by the same.

January 16th, 1868.

George Bentham, Esq., President, in the Chair.

T. C. Cox, M.D., Michael Foster, M.D., Benjamin Daydon Jackson,

Esq., Robert Waters Moon, M.D., and M. J. Barrington-Ward, Esq., were elected Fellows.

The following Report, on the Additions to the Library since the last meeting, was read:—

The Publications of Scientific Bodies received since the last meeting have been the following:—

Belgium:—

Royal Society of Botany of Belgium. Bulletin vi. parts 1 and 2.

Germany:—

Royal Academy of Sciences, Berlin. *Proceedings (Monatsberichte) Aug. 1867.

Ferdinandeum for Tirol and Vorarlberg. Journal (Zeitschrift) Ser. 3, xiii.

German Association of Naturalists and Medical Men. Diary (Tageblatt) of the 41st meeting at Frankfort-on-the-Maine.

Italy:—

Royal Academy of Sciences of Turin. Transactions (Memorie) Ser. 2, xxiii; *Proceedings (Atti) ii. parts 4 to 7.

Royal Institute of Venice (Istituto Veneto). Transactions (Memorie) xiii. part 3; *Proceedings (Atti) xii. parts 4 to 9.

Royal Technical Institute of Palermo. Journal (Giornale) of Natural and Economical Sciences iii. parts 1 to 3.

United States:—

Essex Institute of Salem. Proceedings v. parts 3 and 4.

Great Britain:—

Royal Society. *Proceedings xvi. n. 96.

Royal Microscopical Society. Quarterly Journal xvi. part 1.

Royal Society of Edinburgh. Transactions xxiv. part iii.; Proceedings vi. 1866–7.

Botanical Society of Edinburgh. Transactions ix. part 1.

Committee of Correspondence of British Guiana. Catalogue of Contributions to the Paris Universal Exhibition.

The January numbers of various periodicals and serials taken in by the Society have also been laid on the table.

The papers in recent biology contained in the above, and the separate works added to the Library, are as follows:—

MAMMALIA:—

S. Arloing. On the Structure of the foot of the Horse. Ann. Sc. Nat. Ser. 5, viii.

H. Burmeister. On *Globiocephalus Grayi*, 1 plate. Ann. Nat. Hist. Ser. 4, i.

J. E. Gray. Revision of the Species of *Hyrax*. Ann. Nat. Hist. Ser. 4, i.

F. M'Coy. On *Phascolomys setosus* and *P. niger*. Ann. Nat. Hist. Ser. 4, i.

ORNITHOLOGY:—

T. M'Ilwraith. List of Birds observed near Hamilton, Canada West. Essex Instit. Proceed. v.

ICHTHYOLOGY:—

J. Couch. History of the Fishes of the British Islands, 4 vols. 8vo, plates. Presented by the Author.

R. Kner. Zoology of the Voyage of the Novara. 4to. Fishes, parts 1 and 2, 11 plates. Purchased.

REPTILES AND BATRACHIA:—

L. Fasce. On the loss of volume in the contraction of muscles from experiments made on a Frog and on a Tortoise. Journ. Nat. Sc. Instit. Palermo iii.

F. de Filippi. On the Structure of the Skin of *Stellio caucasieus*, 1 plate. Mem. Acad. Sc. Turin xxiii.

ENTOMOLOGY:—

Entomologists' Annual for 1868.

Entomologist and Entomologists' Monthly Magazine for January.

S. de Bertolini. Systematic enumeration of the Beetles of the Trentino. Atti Instit. Venet. xii.

Mr. G. Bonnet. On *Pulex penetrans*. Ann. Sc. Nat. Ser. 5, viii.

F. Brauer. Zoology of the Voyage of the Novara. 4to. Neuroptera, 2 plates. Purchased.

A. G. Butler. On *Papilio Cocytus*, Fabr. Ann. Nat. Hist. Ser. 4, i.

C. Felder and R. Felder. Zoology of the Voyage of the Novara. 4to. Lepidoptera, part 2, 20 plates, part 3, 17 plates. Purchased.

V. Graber. Contributions to the Hemipteral and Orthopteral Faunas of Tyrol. Ferdinandeum Zeitschr. xiii.

J. M. Hinterwaldner. Contributions to the Lepidopteral Fauna of Tyrol. Ferdinandeum Zeitschr. xiii.

G. L. Mayr. Zoology of the Voyage of the Novara. 4to. Hemiptera, 5 plates. Purchased.

Crustacea and Araneida :—

A. Ausserer. Mode of life, development, and reproduction of Spiders. Ferdinandeum Zeitschr. xiii.

C. Heller. Zoology of the Voyage of the Novara. 4to. Crustacea, 25 plates. Purchased.

J. C. Schiödte. Structure of the mouth in sucking Crustacea (translation), 1 plate. Ann. Nat. Hist. Ser. 4, i.

R. M. de Termeyer. Researches and experiments upon silk from Spiders, and upon their reproduction (continued). Essex Instit. Proceed. v.

Mollusca :—

M. P. Fischer. Observations on the Natural History of Cephalopods (continued). Ann. Sc. Nat. Ser. 5, viii.

G. v. Frauenfeld. Zoology of the Voyage of the Novara. 4to. Mollusca, 2 plates. Purchased.

A. Issel. Catalogue of Mollusca collected by the Italian Mission in Persia, with descriptions of new or little-known species, 3 plates. Mem. Acad. Turin xxiii.

S. de Luca and P. Panceri. Saliva and salivary organs of *Dolium Galea*. Ann. Sc. Nat. Ser. 5, viii.

F. M'Coy. On a new Volute, 1 plate. Ann. Nat. Hist. Ser. 4, i.

E. T. Newton. Anatomical differences in some species of *Helices* and *Limaces*, 2 plates. Journ. Microsc. Sc. xvi.

Lower Orders of Animals :—

M. Barthelemy. On *Rhabditis terricola*. Ann. Sc. Nat. Ser. 5, viii.

R. Brown. Nature of the discoloration of the Arctic Seas. Reprint from 'The Farmer.' Presented.

E. Claparède. Miscellanées Zoologiques, 4 plates. Ann. Sc. Nat. Ser. 5, viii.

C. Collingwood. On gigantic Sea-anemones in the China Sea. Ann. Nat. Hist. Ser. 4, i.

P. Duchassaing and J. Michelotti. Supplemental Memoir on the Coralliaria of the Antilles, 11 plates. Mem. Acad. Turin xxiii.

F. de Filippi. On the Hydrozoa of the Mediterranean, 1 plate. Mem. Acad. Turin xxiii.

A. Hyatt. Observations on Polyzoa (continued). Essex Instit. Proceed. v.

J. Müller and F. H. Troschel. System der Asteriden. 4to, 12 plates. Purchased.

H. A. Nicholson. Nature and zoological position of Graptolitidæ, 1 plate. Ann. Nat. Hist. Ser. 4, i.

T. G. Tatem. New species of Microscopical Animals, 1 plate. Journ. Microsc. Sc. xvi.

Phænogamic Botany:—

J. H. Balfour. On *Vellozia Talboti* or *Talbotia elegans*. Trans. Bot. Soc. Edinb. ix. 1.

F. Crepin, A. Devos, and others. Various contributions to the local Flora of Belgium. Bull. Soc. Bot. Belg. vi.

B. Dumortier. Monograph of Belgian Roses. Bull. Soc. Bot. Belg. vi.

J. Gorham. Venation of Umbelliferæ, 1 plate. Journ. Microsc. Sc. xvi.

Prof. Jameson. On *Chuquiraga insignis* and other Andine Compositæ. Trans. Bot. Soc. Edinb. ix.

W. Lauder Lindsay. On the Glumaceæ of Otago, New Zealand. Trans. Bot. Soc. Edinb. ix.

H. Mann. Flora of the Hawaiian Islands (commencement). Essex Instit. Proceed. v.

A. Murray. The Pines and Firs of Japan. 8vo, numerous woodcuts. Presented by the Author.

Peters. Reise nach Mossambique. Botany, 2 parts. 4to, plates. Purchased.

Sadler. On the Palm trees of Old Calabar. Trans. Bot. Soc. Edinb. ix.

Vegetable Physiology, General and Miscellaneous Botany:—

J. Chalon. Materials towards the determination of families, genera, and species by the anatomy of stems. Bull. Soc. Bot. Belg. vi.

J. Collins. On commercial kinds of Caoutchouc. Seem. Journ. Bot. vi.

A. Ernst. Cultivated and naturalized plants of Caraccas. Seem. Journ. Bot. vi.

F. Famintzin and J. Borodin. On the transitory production of starch in the Birch. Bot. Zeit. 1867.

B. Frank. Phenomena of fluorescence the cause of the coloration of the parts of plants. Bot. Zeit. 1867.

J. R. Fraser. Physiological action of the Calabar Bean (*Physostigma venenosum*, Balf.). R. Soc. Edinb. Proceed. vi.; Trans. xxiv.

M. Hartig. Various notes on peculiar Pollens. Bot. Zeit. 1867.

F. A. v. Hartsen. On a hybrid between the Tomato and Aubergine. Bot. Zeit. 1867.

J. A. Henry. On pure hybridization of plants. (Opening Address.) Trans. Bot. Soc. Edinb. ix.; also a separate copy presented by the Author.

G. Holzner. On the physiological importance of oxalate of Lime in plants. Flora 1867.

A. Sobrero. On the vine-disease. Mem. Acad. Turin xxiii.

Cryptogamic Botany:—

Dr. Bail. On Parasitical Fungi, 1 plate. Tagebl. Versamml. Naturf. u. Aerzte, Frankfurt.

A. Fischer v. Waldheim. Contributions to the knowledge of Ustilagineæ. Bot. Zeit. 1867.

E. Hallier. Mycological Researches.—Cholera-Fungus on *Oryza sativa*. Flora 1867.

G. Inzenga. New Fungi (continued). Techn. Instit. Palermo Journ. iii.

F. Kitton. New Diatomaceæ. Journ. Microsc. Sc. xvi.

W. Lauder Lindsay. Polymorphism in the fructification of Lichens. Journ. Microsc. Sc. xvi.

——. Lists of Fungi, of Mosses and Hepaticæ, of Ferns, Lycopodiaceæ and Marsileaceæ collected in Otago, New Zealand. Trans. Bot. Soc. Edinb. ix.

——. On the Arctic Cladoniæ. Trans. Bot. Soc. Edinb. ix.

——. On the Lichen-Flora of Druidical stones in Scotland. Trans. Bot. Soc. Edinb. ix.

W. A. Leighton. Notulæ Lichenologicæ (continued). Ann. Nat. Hist. Ser. 4, i.

P. G. Lorentz. Studies on the comparative anatomy of Mosses, 5 plates. Flora 1867.

——. Anatomy and development of *Timmia Austriaca*. Bot. Zeit. 1867.

W. R. M'Nab. On Selaginellas cultivated in the Royal Botanic Garden, Edinburgh. Trans. Bot. Soc. Edinb. ix.

A. S. Œrsted. Observations which have led to the discovery of the organs of fructification in Agaricini. (Translated) Journ. Microsc. Sc. xvi.

P. Reinsch. On the genetic connexion of *Hormidium*, *Schizogonium*, and *Prasiola*. Bot. Zeit. 1867.

W. J. Smith. On *Morchella crassipes*, Pers., 1 plate. Seem. Journ. Bot. vi.

R. de Visiani. On *Cheilanthes Szovitsii*, 1 plate. Atti Instit. Venet. xii.

Buchanan White. On *Grimmia subsquarrosa*, Wils., 1 plate, and on two new Hypna from Breadalbane. Trans. Bot. Soc. Edinb. ix.

G. Zanardini. New or rare Algæ of the Mediterranean and Adriatic Seas, 8 plates. Mem. Istit. Venet. xiii.

Miscellaneous :—

Middendorf. Sibirische Reise iv. Part 1. Geography, climate, and vegetation. Part 2. Animal World (Thierwelt). 4to, with folio Atlas. Purchased.

Dr. Hooker, V.P.L.S., made some observations on some remarkable specimens of abnormal Cocoa-nuts exhibited by him; and read a letter from Dr. E. Perceval Wright, on a singular monstrosity of the Cocoa-nut that had recently come under his notice at Silhouette, one of the Seychelles Islands.

A letter was read from Dr. Ferdinand Müller, of Melbourne, to the President, giving an account of his botanical excursions, during a few weeks' visit to King George's Sound.

Mr. Carruthers, F.L.S., exhibited specimens of coal-plants preserved in a deposit of volcanic ash from the Island of Arran, and made some observations upon them.

Mr. Maw, F.L.S., exhibited, from the Lower Bagshot beds of Studland Bay, impressions of leaves which closely resemble those of *Kydia calycina*, and are found in connexion with the flowers of the so-called "*Porana*" exhibited by Mr. Maw at the last Meeting.

The following papers were read, viz. :—

1. "Notes on Mosses, &c., collected by Mr. James Taylor on the shores of Davis Straits," by George Dickie, A.M., M.D., F.L.S.

2. "On a collection of *Fungi* from Cuba, part 2, including those belonging to the families *Gasteromycetes*, *Coniomycetes*, *Hyphomycetes*, *Physomycetes*, and *Ascomycetes*," by the Rev. M. J. Berkeley, M.A., F.L.S.

3. "A few additional particulars regarding *Couchia Edwardsii*," by Thomas Edward, A.L.S.

February 6th, 1868.

George Bentham, Esq., President, in the Chair.

Alfred William Bennett, Esq., Arthur Gardiner Butler, Esq., and Gilbert W. Child, M.D., were elected Fellows.

The following Report, on the Additions to the Library since the last meeting, was read:—

The Publications of Scientific Bodies received since the last meeting have been the following:—

Germany:—

Royal Academy of Sciences of Berlin. *Proceedings (Monatsbericht) Sept. and Oct. 1867.

Imperial Academy of Sciences of Vienna, Mathematical and Natural-Science Class. Proceedings (Sitzungsberichte) 1st section lv. parts 3 to 5, lvi. part 1. *Proceedings (Sitzungsberichte) 2nd section lv. parts 3 to 5, lvi. parts 1 and 2. (Besides the papers enumerated below, the 1st section comprises numerous illustrated palæontological papers.)

Switzerland:—

Natural History Society of Basle. Transactions (Verhandlungen) iv. part 4; Anniversary publication (Festschrift) 1867, and Anniversary Address (Festrede) 1867.

Great Britain:—

Royal Society. *Proceedings xvi. n. 97.

Entomological Society. Transactions, Ser. 3, iv. part 3, v. part 7.

The February numbers of various periodicals and serials taken in by the Society have also been laid on the table.

The papers in recent biology contained in the above, and the separate works added to the Library, are as follows:—

Mammalogy and General and Miscellaneous Zoology:—

The Zoologist for February.

L. J. Fitzinger. Attempt at a natural arrangement of Rodentia. Vienna Acad. Proceed. Sect. 1. lv., lvi.

K. Fritsch. Calendar of the Austrian Fauna. Vienna Acad. Proceed. Sect. 1. lvi.

J. E. Gray. On the Sea-bears (*Otariadæ*), especially the Fur-seals and Hair-seals of the Falkland Islands and Southern America. Ann. Nat. Hist. Ser. 4, i.

W. His. On the first stage of Development of the Body of the Vertebrated Animals (continued). Basle Nat. Hist. Soc. Trans. iv.

Ichthyology:—

F. Steindachner. Icthyological Notes, n. 4, 6 plates, n. 5, 3 plates. Vienna Acad. Proceed. Sect 1. lv.

——. On some new and rare Sea-fish from China. Vienna Acad. Proceed. Sect. 1. lv.

L. Stieda. Studies on the Central Nervous System of Osseous Fish, 2 plates. Zeitschr. wissensch. Zool. xviii. 1.

Reptiles and Batrachia:—

W. Engelmann. On the Terminations of the Nerves of Taste in the Tongue of the Frog, 1 plate. Zeitschr. wissensch. Zool. xviii.

C. Hasse. Histology of the semicircular canals &c. and otolite-sacculus of the Frog, 2 plates. Zeitschr. wissensch. Zool. xviii.

C. Langer. On the System of Lymphatic Vessels in the Frog, 3 plates. Vienna Acad. Proceed. Sect. 1. lv.

Entomology:—

Entomological Society of France. Annals iii. 1834 (hitherto deficient in our set). Presented by Mr. Dallas.

Entomological Society of London. Transactions, Ser. 3, iv. part 3, with 4 plates; v. part 7, with 3 plates.

Stettiner entomologische Zeitung xxviii. parts 1 to 12.

Entomologist, and Entomologist's Monthly Magazine, numbers for February.

A. G. Butler. On the Sexes of the Cocytus group of the genus *Adolias*. Ann. Nat. Hist. Ser. 4, i.

H. Grenacker. Contributions to the knowledge of the Egg of Ephemeridæ, 1 plate. Zeitschr. wissensch. Zool. xviii.

F. E. Guérin-Méneville. Reports on the introduction of the Ailanthus Silkworm (*Bombyx Cynthia*), and on the progress of the cultivation of the tree and the education of the Silkworm in France and Algeria, 8vo, 1860 and 1862. Presented by Captain Lendy.

A. Krohn. On the presence of two glandular sacs in the cephalothorax of *Phalangiidæ* (translation). Ann. Nat. Hist. Ser. 4, i.

F. P. Pascoe. On the names applied to British Hemiptera Heteroptera, and Reply by J. W. Douglas and J. Scott. Ann. Nat. Hist. Ser. 4, i.

Mollusca :—

Malakozoologische Blätter, commencement of vol. xv.

Journal de Conchyliologie, Ser. 3, viii. 1, 5 plates.

A. Morelet. Voyage du Dr. Welwitsch. Terrestrial and Freshwater Mollusca of Dr. Welwitsch's expedition into the kingdoms of Angola and Benguella, with a general Introduction giving an account of the journey. Large 4to, 9 plates. Presented by Dr. Welwitsch.

W. T. Blanford. On the occurrence of *Diplommatina Huttoni* and *Ennea bicolor* in the West Indies. Ann. Nat. Hist. Ser. 4, i.

C. Collingwood. On the distribution of some species of Nudibranchiate Mollusca in the China Sea. Ann. Nat. Hist. Ser. 4, i.

Lower Animals :—

E. Eberhard. Contributions to the theory of sexual propagation of the Infusoria. Zeitschr. wissensch. Zool. xviii.

J. E. Gray. Note on *Leskia mirabilis*. Ann. Nat. Hist. Ser. 4, i.

H. James-Clark. On the Spongiæ ciliatæ as Infusoria flagellata, 3 plates. Ann. Nat. Hist. Ser. 4, i.

F. Ratzel. Contributions to the anatomy of *Enchytræus vermicularis*, 2 plates. Zeitschr. wissensch. Zool. xviii.

E. Selenka. Addition to the Contributions to the anatomy and systematics of *Holothuria*, 1 plate. Zeitschr. wissensch. Zool. xviii.

W. Thomson. On vitreous Sponges, 1 plate. Ann. Nat. Hist. Ser. 4, i.

Phænogamic Botany :—

F. Hance. On a new *Sagina* and 5 new Monochlamydeous plants from China. Seem. Journ. Bot. vi.

F. A. W. Miquel. On Japanese Maples (from the Archives Néerlandaises). 8vo. Presented by the Author.

B. Seemann. Revision of *Hederaceæ* (continued). Seem. Journ. Bot. vi.

Geographical Botany :—

N. J. Andersson. General sketch of the vegetation of Sweden. Ann. Sc. Nat. Bot. Ser. 5, vii.

W. Colenso. Essay on the Botany of the North Island of New

Zealand on the occasion of the New-Zealand Exhibition 1865. 8vo. Presented by the Author.

F. A. W. Miquel. On the Character and Origin of the Japanese Flora. 8vo. (From the Archives Néerlandaises.) Presented by the Author.

Physiological Botany :—

J. E. Balsamo. On artificial hybridization in the genus *Gossypium*. Ann. Nat. Hist. Ser. 4, i.

G. Bennett. On variation of colour in *Telopea speciosissima* and other Australian plants, and on curious epiphytes from Cape York. Seem. Journ. Bot. vi.

A. Famintzin. Influence of light on Algæ and various other plants, 1 plate. (Partly reproduced from the Bullet. Petersb. Acad. : see above, p. x.) Ann. Sc. Nat. Bot. Ser. 5, vii.

M. Reess. Critical examination of Böhm's views on the development and functions of *Thylla* in plants. Bot. Zeit. 1868.

J. T. C. Ratzeburg. Die Waldverderbniss ; or the permanent injuries inflicted on living forest-trees by insects, by barking, by blows, and by the biting of animals. Vol. ii. part 1. 4to, 5 plates and woodcuts. Purchased.

A. Trécul. On the amylaceous matter and amyliferous cryptogams in the vessels of the latex of several Apocyneæ. Ann. Sc. Nat. Bot. Ser. 5, vii.

Cryptogamic Botany :—

E. Bornet and G. Thuret. On the fecundation of Florideæ, 3 plates. Ann. Sc. Nat. Bot. Ser. 5, vii.

W. G. Smith. New and rare Hymenomycetous Fungi of the British Flora, 1 plate. Seem. Journ. Bot. vi.

Miscellaneous :—

C. Darwin. The Variation of Animals and Plants under Domestication. 8vo, 2 vols. Presented by the Author.

E. Dieffenbach. Travels in New Zealand. 8vo, 2 vols. Presented by Mr. Kippist.

L. Rutimeyer. On the Vocation of Natural History. Basle Nat. Hist. Soc. Anniversary Address 1867.

E. Schwartz. On a method of double colouring of microscopical objects and its application to the investigation of the structure of the skin, the spleen, lymphatic glands, and other organs, 5 plates. Vienna Acad. Sect. 1 Proceed. lv.

A letter was read from M. Beccari to Dr. Hooker, dated Sarawak, 4th November, 1867, giving an account of his botanical explorations in Sarawak.

The President informed the Society that the rich Herbarium of the late M. F. Gay, containing his celebrated collection of European plants, had been purchased by Dr. Hooker, and presented by him to the Herbarium of the Royal Gardens, Kew.

Mr. W. Rich exhibited a beautiful series of specimens of *Unio* from ponds in the neighbourhood of London.

The following papers were read, viz. :—

1. "On a new Light-giving Coleopterous Larva," by Andrew Murray, Esq., F.L.S.

2. "On the Structure and Fertilization of *Liparis Bowkeri*," by Mrs. M. E. Barber. Communicated by Dr. Hooker, F.R.S., V.P.L.S., &c.

February 20th, 1868.

George Bentham, Esq., President, in the Chair.

Septimus P. Moore, LL.B., and James Murie, M.D., were elected Fellows.

The following Report, on the Additions to the Library since the last meeting, was read :—

The Publications of Scientific Bodies received since the last meeting have been the following :—

DENMARK :—

Royal Danish Society of Science. Transactions (Skrifter), Ser. 5, Natural History and Mathematical Section vi. ; Proceedings (Oversigt) 1865. n. 5, 1867. n. 4.

FRANCE :—

Société Botanique de France. Bulletin x. n. 9 (meeting at Cham-

béry in 1863), xiii. n. 3; Revue Bibliographique xiii. E, F, xiv. A, B, C, D.

Great Britain :—

Geological Society. *Quarterly Journal xxiv. part 1.

Quekett Microscopical Club i. n. 1.

Zoological Society's Proceedings xvi.; also Index to the Proceedings 1830 to 1847 and 1848 to 1860.

The Linnean Society's Journal, Zoology ix. n. 39, and the current numbers of various periodicals and serials taken in by the Society are also on the table.

The papers in recent biology, and separate works added to the Library, are as follows :—

Mammalogy and General Zoology :—

G. F. Angas. Description of *Tragelaphus Angasii*, Gray, 2 plates. Proc. Zool. Soc. xvi.

D. de Dolmatoff. Note on the capture of the Aurochs, woodcut. Proc. Zool. Soc. xvi.

J. E. Gray. A new *Galedictis* from Madagascar, 1 plate. *Ptilocercus*, a new genus of *Talpidæ*, 1 plate. On *Myodes hudsonicus* and others. *Cercopithecus Pluto*, a new Monkey from Angola, 1 plate. New Brazilian Bats, with a new genus, *Nyctiplanus*. Two new Mammalia from Caraccas, 2 plates. Proc. Zool. Soc. xvi.

G. Gulliver. Measurements of the red corpuscles in the blood of Vertebrata. Proc. Zool. Soc. xvi.

R. Owen. On a new Chimpanzee (*Troglodytes Gorilla*), 2 papers. Notes on the Anatomy of the male Aurochs. Proc. Zool. Soc. xvi.

R. F. Tomes. Occurrence and habits of *Vespertilio emarginatus*. Proc. Zool. Soc. xvi.

H. N. Turner, jun. On foramina at the base of the skull of Mammalia, and on the classification of Carnivora. Proc. Zool. Soc. xvi.

Ornithology :—

Ibis iv. n. 13.

J. Gould. Drafts for a new arrangement of *Trochilidæ*, 2 plates. Seven new Australian Birds. A new Heron. A new *Cinclosoma*, 1 plate. Proc. Zool. Soc. xvi.

G. R. Gray. A new Parrot, 1 plate. A new *Podica*, 1 plate. Another new Parrot, 1 plate. Proc. Zool. Soc. xvi.

ERPETOLOGY:—

P. H. Gosse. Habits of *Ameiva dorsalis*, of *Mabouya agilis*, and of *Cyclura lophoma*, 1 plate. Proc. Zool. Soc. xvi.

ENTOMOLOGY:—

E. Doubleday. *Hylæora*, a new genus of *Notodontidæ*, 1 plate. Proc. Zool. Soc. xvi.

W. C. Hewitson. A new *Agrias*, 1 plate. *Corades*, a new genus of *Satyridæ*, 1 plate. Proc. Zool. Soc. xvi.

CRUSTACEA:—

J. E. Gray. A new *Anatifa*, 2 figures. *Thaliella*, a new genus of Cirripedes. Proc. Zool. Soc. xvi.

A. White. *Echinocerus cibarius*, a new species and subgenus, 2 plates. Two new Crustacea, 1 plate. Proc. Zool. Soc. xvi.

MOLLUSCA:—

A. Adams and L. Reeve. *Hemipecten*, a new genus of Acephalous Mollusca, 1 fig. Proc. Zool. Soc. xvi.

W. Dunker. Diagnoses of new species of *Planorbis* from Cuming's Collection. Proc. Zool. Soc. xvi.

J. S. Gaskoin. Descriptions of new species of *Cypræa*. Proc. Zool. Soc. xvi.

J. E. Gray. The species of *Placenta*. Proc. Zool. Soc. xvi.

L. Pfeiffer. New species of *Vitrina* and of *Helicina* from Cuming's Collection. Proc. Zool. Soc. xvi.

L. Reeve. Conchologia Iconica, parts 268, 269. Purchased.

——. On *Fastigiella*, a new genus of *Canalifera*, woodcut. 20 new species of *Turbo*. Proc. Zool. Soc. xvi.

G. B. Sowerby, jun. New species of *Ovulum* and of *Cancellaria* from Cuming's Collection. Proc. Zool. Soc. xvi.

H. E. Strickland. Habits of *Nanina vitrinoides*, 1 plate. Proc. Zool. Soc. xvi.

LOWER ANIMALS:—

J. E. Gray. *Sarcoptilus*, a new genus of *Pennatulidæ*, 1 plate. Proc. Zool. Soc. xvi.

S. J. M'Intyre. On Pseudo-scorpiones. Journ. Quek. Microsc. Club i.

Phænogamic Botany :—

E. Fournier. Etymology and origin of the genus *Hesperis*. Bull. Soc. Bot. Fr. xiii.

J. Lange. Notes on the most important species figured in the 46th part of the 'Flora Danica.' R. Dan. Soc. Sc. Proceed. 1867.

G. Munby. On *Iberis parviflora*, and on the Arab names of Algerian plants. Bull. Soc. Bot. Fr. xiii.

Richter and Loret. On a *Romulea* new to the south of France. Bull. Soc. Bot. Fr. xiii.

Physiological and Miscellaneous Botany :—

D. Clos. On the pulvinary spines of some species of *Asparagus*. Bull. Soc. Bot. Fr. xiii.

P. Duchartre. On the Growth of some Plants during the Night. Bull. Soc. Bot. Fr. xiii.

E. Faivre. On some physiological phenomena in the vegetation of Mulberry-cuttings. Bull. Soc. Bot. Fr. xiii.

F. Hartig. On the circulation of the sap in Woody Plants. Ann. Sc. Nat. Bot. Ser. 5, vii.

Kirschleger. Morphology of the scale of Coniferæ, and of the acicular leaves of *Asparagus*. Bull. Soc. Bot. Fr. xiii.

E. Prillieux. On the Colouring-matter of Black Grapes. On the Development and Structure of the roots of Orchideæ. Bull. Soc. Bot. Fr. xiii.

S. Rosanoff. On the red pigment of Florideæ and its physiological functions. Bull. Soc. Bot. Fr. xiii.

Cryptogamic Botany :—

C. M. Gottsche. Mexican Hepaticæ described from Prof. Liebmann's Collection. R. Dan. Soc. Sc. Trans. Ser. 5, vi.

J. Milde. On the Fern Flora of Atlantis (the Atlantic islands). Bot. Zeit. 1867.

W. Nylander. Additions to the Lichens of Triana and Planchon's 'Prodromus Floræ Novogranatensis.' Ann. Sc. Nat. Bot. Ser. 5, vii.

Miscellaneous :—

Linnæi Species Plantarum. An interleaved and annotated copy, which belonged to the poet Gray. Presented by Dr. Dickson.

A. Murray. Journal of Travel and Natural History, No. 1. Presented by the Publishers.

Mr. Bull, F.L.S., exhibited living plants, in fruit, of several varieties of *Aucuba japonica*, Thunb., and *A. himalaica*, H. f. & T., together with specimens of the male and hermaphrodite flowers; and made some observations with respect to the very long time during which the pollen of the male plant retains its fertilizing power, the female plant having, in one instance, been fecundated by means of pollen produced nearly eighteen months before.

The following paper was read, viz.:—

"On the Character and Hybrid-like Nature of the Offspring from the illegitimate unions of Dimorphic and Trimorphic Plants," by Charles Darwin, Esq., F.R.S., F.L.S., &c.

March 5th, 1868.

George Bentham, Esq., President, in the Chair.

Worthington George Smith, Esq., was elected a Fellow.

The following Report, on the Additions to the Library since the last meeting, was read:—

The Publications of Scientific Bodies received since the last meeting have been the following:—

GERMANY:—

Royal Academy of Sciences, Berlin. Proceedings (Monatsberichte) 1867, Nov.

Royal Academy of Sciences, Munich. Proceedings (Sitzungsberichte) 1867, ii. 2, 3.

FRANCE:—

Société des Sciences Physiques et Naturelles, Bordeaux. Transactions (Mémoires) v. part 2.

EAST INDIA:—

Asiatic Society of Bengal. *Proceedings 1866. 1 to 3, 1867, Aug. to Dec. 1865, and Index for 1865; Journal 1867, *part 1. n. 2; part 2, n. 2.

GREAT BRITAIN :—

Royal Society. *Proceedings xvi. n. 98.

Royal Geographical Society. *Proceedings xii. n. 1.

Plymouth Institution and Devon and Cornwall Natural-History Society. *Annual Report and Transactions ii. part 2.

The Transactions of the Linnean Society xxvi. part 1, the Journal of the Linnean Society, Botany x. n. 42, and the March numbers of various periodicals and serials taken in by the Society are also on the table.

The papers in recent biology contained in the above, and the separate works added to the Library, are as follows :—

MAMMALOGY AND GENERAL ZOOLOGY :—

J. E. Gray. On the Fur-seals of the Antarctic Seas and the Cape of Good Hope. Ann. Nat. Hist. Ser. 4, i.

L. H. Jeitteles. On *Amblyotus atratus*, the new Bat discovered by Prof. Kolenati. Ann. Nat. Hist. Ser. 4, i.

W. Peters. On Bats. R. Berlin Acad. Sc. Proceed. Nov. 1867.

J. B. Pettigrew. On the Mechanical appliances by which Flight is attained in the Animal Kingdom, 4 plates. Trans. Linn. Soc. xxvi.

C. Voit. On the Formation of Fat in the bodies of animals. R. Munich Acad. Proceed. 1867, ii. 3.

ORNITHOLOGY :—

W. Buller. Essay on the Ornithology of New Zealand, on the occasion of the New Zealand Exhibition of 1865. Presented by the Author.

O. Finsch and G. Hartlaub. Ornithology of the Viti, Samoa, and Tonga Islands. 8vo, 14 plates. Halle. Purchased.

R. C. Tytler. Description of *Vultur Monachus*. Asiatic Soc. Beng. Proceed. 1866.

Various Notes on British Birds, in the Zoologist.

ICHTHYOLOGY :—

S. Jourdain. Note on the lymphatic system of *Gadus Morrhua*. Ann. Sc. Nat. Zool. Ser. 5, viii.

REPTILES :—

W. Peters. On Amphibia, 1 plate. R. Berlin Acad. Sc. Proceed. Nov. 1867.

ENTOMOLOGY :—

Entomologist and Entomologists' Monthly Magazine for March.

Insect Hunters' Year Book for 1867.

M. C. Lespès. Anatomical investigation of blind Coleoptera. (From the 'Comptes Rendus.') Ann. Nat. Hist. Ser. 4, i.

CRUSTACEA AND ARACHNIDA :—

P. Bert. On the physiology of the Cuttlefish (*Sepia officinalis*). Soc. Sc. Phys. Nat. Bordeaux Trans. v. part 2.

J. Lubbock. Notes on *Thysanura*, part 3, 2 plates. Trans. Linn. Soc. xxvi.

——. On *Pauropus*, a new type of Centipede, 1 plate. Trans. Linn. Soc. xxvi.

MOLLUSCA :—

R. J. L. Guppy and J. Hogg. On the Lingual Dentition of some West-Indian Gasteropoda, 1 plate. Trans. Linn. Soc. xxvi.

LOWER ORDERS OF ANIMALS :—

R. Greeff. On *Autolytus prolifer*, 1 plate. Ann. Nat. Hist. Ser. 4, i.

J. E. Gray. Nomenclature and arrangement of Sponges. Ann. Nat. Hist. Ser. 4, i.

W. Keferstein. On *Borlasia hermaphroditica* from St. Malo. (From the Bibl. Univ.) Ann. Nat. Hist. Ser. 4, i.

A. Kölliker. Polymorphism of Anthozoa and structure of Tubiporæ. (From the Bibl. Univ.) Ann. Nat. Hist. Ser. 4, i.

F. B. Meek. *Ethmophyllum*, a new genus of Corals. (From Sillim. Journ.) Ann. Nat. Hist. Ser. 4, i.

PHÆNOGAMIC AND GENERAL BOTANY :—

J. E. T. Aitchison. Lahul, its Flora and Vegetable products, &c. Journ. Linn. Soc. Bot. x.

V. Ball. Jungle products used as articles of Food in the districts of Maubhoom and Hazaribágh. Journ. Asiat. Soc. Beng. 1867, ii.

G. Bentham. Notes on Myrtaceæ. Journ. Linn. Soc. Bot. x.

R. Brown's Miscellaneous Works, edited by J. J. Bennett, vol. ii. From the Ray Society.

J. Gay. Various pamphlets, separate copies from various Journals. Presented by Dr. Hooker.

E. Le Maout and J. Decaisne. Traité général de Botanique descriptive et analytique. 4to, with very numerous woodcuts. Purchased.

J. Miers. On the genus *Crescentia*, 3 plates. Trans. Linn. Soc. xxvi.

W. Munro. A monograph of Bambusaceæ, 6 plates. Trans. Linn. Soc. xxvi.

A. Richard. Tentamen Floræ Abyssinicæ. The greater portion of vol. i. (wanting in our copy, which is still not quite complete). Presented by Dr. Hooker.

Cryptogamic Botany :—

J. G. Baker. On the geographical distribution of Ferns. Trans. Linn. Soc. xxvi.

A. v. Krempelhuber. History and Literature of Lichenology (Geschichte &c.). Vol. i. 8vo. Purchased.

M. Kuhn. Filices Africanæ. 8vo. Purchased.

W. A. Leighton. Notulæ Lichenologicæ, n. 21. Ann. Nat. Hist. Ser. 4, i.

J. Milde. On *Osmunda*. Flora, 1868.

F. Welwitsch and F. Currey. Fungi Angolenses, 4 plates. Trans. Linn. Soc. xxvi.

G. Zanardini. Iconographia Phycologica Adriatica. 4to, plates. Vol. i. and vol. ii. 1 and 2. Purchased.

Miscellaneous :—

Geological Magazine, vols. iii. and iv. Presented by the Editor, Mr. Woodward.

R. de Visiani. The scientific Life of C. A. Parolini (from the Atti of the R. Institute of Venice). Presented by the Author.

The following paper was read, viz. :—

"On some remarkable Mimetic Analogies among African Butterflies," by Roland Trimen, Esq., Memb. Ent. Soc. Lond. Communicated by Dr. Trimen, F.L.S.

March 19th, 1868.

George Bentham, Esq., President, in the Chair.

The following Report, on the Additions to the Library since the last meeting, was read:—

The Publications of Scientific Bodies received since the last meeting have been the following:—

GERMANY:—

Royal Academy of Sciences, Berlin. Transactions (Abhandlungen) for the year 1866.

Royal Society of Sciences, Göttingen. *Transactions (Abhandlungen) xiii.; Proceedings (Nachrichten) 1867.

ITALY:—

Royal Society of Naples. Academy of Physical and Mathematical Sciences. Proceedings (Rendiconto) 1865. n. 5 to 12, 1866, 1867. n. 1 to 6.

GREAT BRITAIN:—

Royal Society. *Proceedings xvi. n. 99.

The current numbers of various periodicals taken in by the Society are also on the table.

The papers in recent biology contained in the above, and the separate works added to the Library, are as follows:—

MAMMALOGY AND GENERAL ZOOLOGY:—

Hensel. Report on the Contributions to the Natural History of Mammalia for 1866. Wiegm. Arch. xxxiii.

S. de Luca. Various chemical papers on substances found in Animals. Acad. Phys. Math. Sc. Naples Proceed. 1865, 1866, 1867.

W. K. Parker. Monograph on the structure and development of the Shoulder-girdle and Sternum in Vertebrata. Folio, 30 plates. From the Ray Society.

Third Report of the Zoologico-Zootomic Institute of Göttingen, 1866. From the Royal Society of Göttingen.

ORNITHOLOGY :—

S. de Luca. Observations on the diminution of weight in the eggs of Fowls. Acad. Phys. Math. Sc. Naples Proceed. 1865.

ICHTHYOLOGY :—

O. G. Costa. On the Otolithes of living fishes of the Mediterranean. Acad. Phys. Math. Sc. Naples Proceed. 1867.

G. Kupffer. Formation of the embryo in the egg of Osseous Fish. R. Soc. Sc. Göttingen Proceed. 1867.

F. H. Troschel. Report on the Contributions to Ichthyology in 1866. Wiegm. Arch. xxxiii.

REPTILES AND BATRACHIA :—

E. Albini. Experiments on the respiration of Frogs. Acad. Phys. Math. Sc. Naples Proceed. 1866.

W. Keferstein. New or rare Batrachia from Australia and from Tropical America. R. Soc. Göttingen Proceed. 1867.

ENTOMOLOGY :—

A. Costa. On the species of the hymenopterous genus *Megischus*. On a singular *Coccus* of the Italian Fauna, and on some *Orthoptera*, *Blattidæ*. Acad. Phys. Math. Sc. Naples Proceed. 1866.

E. Suffrian. Gundlach's Cuban Chrysomelidæ. Wiegm. Arch. xxxiii. (not xx. as erroneously given above, p. xx).

CRUSTACEA .—

J. Marcusen. Contributions to the Fauna of the Black Sea (lists only). Wiegm. Arch. xxxiii.

Fritz Mueller. On *Balanus armatus*, and on a hybrid between this species and *B. improvisus*, 3 plates. Wiegm. Archiv xxxiii.

MOLLUSCA :—

A. Costa. Embryological observations on *Salpa pinnata*. Acad. Phys. Math. Sc. Naples Proceed. 1866.

——. Two new genera of Nudibranchiate Mollusca. Acad. Phys. Math. Sc. Naples Proceed. 1867.

J. Marcusen. Contributions to the fauna of the Black Sea (lists only). Wiegm. Arch. xxxiii.

F. H. Troschel. Report on the Contributions to the Natural History of Mollusca. Wiegm. Arch. xxxiii.

LOWER ANIMALS:—

E. Ehlers. On the genus *Heteronereis*, Œrst. R. Soc. Sc. Göttingen Proceed. 1867.

J. Marcusen. Contributions to the Fauna of the Black Sea (lists only). Wiegm. Arch. xxxiii.

Reichert. On the Sarcode or Protoplasm of Polythalamia and other lower animals and their phenomena of motion, 7 plates. R. Acad. Sc. Berlin Trans. 1866.

PHÆNOGAMIC AND GENERAL BOTANY:—

J. G. Baker and H. Trimen. Report of the London Botanical Exchange Club for 1867. Seem. Journ. Bot. vi.

H. F. Hance. Diagnoses of two new *Cyperaceæ* and a new Chinese *Ruellia*. Seem. Journ. Bot. vi.

C. Markham. The Cinchona (spelt Chinchona) species of New Granada. 8vo, woodcuts. Presented by the Author.

G. A. Pasquale. Catalogue of the Royal Botanic Garden of Naples, with critical notes. Small 4to, 1867. Presented by the Author.

——. On a variety of the Tomato (*Lycopersicum esculentum*). On *Trigonella cærulea* as a new genus (*Folliculigera*). On some rare plants from the Royal Botanic Garden, Naples (two papers). Acad. Phys. Math. Sc. Naples Proceed. 1866, 1867; also separate copies presented by the Author.

J. F. Rebentisch. Prodromus Floræ Neomarchicæ. 8vo, 1804. Presented.

VEGETABLE PHYSIOLOGY AND MISCELLANEOUS BOTANY:—

Dr. P. Blair's Pharmaco-Botanologia. 7 decades bound in one, small 4to, 1723 to 1728. Presented.

G. Gasparrini. On the artificial means of accelerating the maturation of Figs. Acad. Phys. Math. Sc. Naples Proceed. 1865.

S. de Luca. Various chemical papers on substances contained in *Myrtus australis* and other plants. Acad. Phys. Math. Sc. Naples Proceed. 1865, 1866, 1867.

Göthe's Essay on the Metamorphosis of Plants, in French and German, 8vo, 1831. Presented.

T. Husemann. On the pharmacology of Euphorbiaceæ. R. Soc. Sc. Göttingen Proceed. 1867.

G. A. Pasquale. On Heterophyllism. 4to, 7 plates. Presented by the Author.

G. A. Pasquale. On the scent of *Serissa fœtida*. On the effects of the sudden fall of temperature, 25th to 29th September 1867, on the plants of the R. Botanic Garden, Naples. Acad. Phys. Math. Sc. Naples Proceed. 1866, 1867; also separate copies presented by the Author.

E. Villari. Experiments on the physical properties of wood when cut parallel with, or perpendicularly to, its fibre. Acad. Phys. Math. Sc. Naples Proceed. 1867.

Cryptogamic Botany:—

R. Brown. On the nature of the discoloration of the Arctic Seas (by Diatoms). Seem. Journ. Bot. vi.

H. Hoffmann. A series of Reports on new Mycological works and papers. Bot. Zeit. 1868.

M. Kuhn. Descriptions of New Ferns. Bot. Zeit. 1868.

G. Mettenius. On the structure of *Angiopteris*. Separate copy from the Transactions of the R. Saxon Society of Sciences. Large 8vo, 10 plates. Presented.

Milde. Index Osmundarum, and on the fructification of *Osmunda*. Bot. Zeit. 1868.

A. Pedicino. On the living Diatoms of the warm baths of Ischia. Acad. Phys. Math. Sc. Naples Proceed. 1867.

M. Woronin. New Contributions to the knowledge of *Chytrideæ*, 2 plates. Bot. Zeit. 1868.

Miscellaneous:—

C. Moreira. Report on the International Exhibition of London, 1862, laid before the Emperor of the Brazils. 1 vol. 4to. Presented by Mr. Miers.

J. P. Obituary notice of the late Dr. Daubeny. Presented by the Author.

The following papers were read, viz.:—

1. "On the specific differences between *Primula veris*, Brit. Fl. (var. *officinalis*, L.), *P. vulgaris*, Brit. Fl. (var. *acaulis*, L.), and *P. elatior*, Jacq., and on the Hybrid Nature of the Common Oxlip, with supplementary remarks on naturally produced Hybrids in the genus *Verbascum*," by Charles Darwin, Esq., F.R.S., F.L.S., &c.

2. "Note on the discovery of *Planaria terrestris* in England," by Sir John Lubbock, Bart., F.R.S., V.P.L.S., &c.

Mr. J. G. Baker, F.L.S., exhibited, from the Herbarium of the Royal Gardens, Kew, an interesting series of specimens of the British species of *Primula* described in Mr. Darwin's paper, and made some observations upon the characters by which they are distinguished.

Mr. W. Andrews, M.R.I.A., Chairman of the Natural-History Section of the Royal Dublin Society, exhibited drawings, the size of life, of the head of *Ziphius Sowerbiensis*, a specimen of which rare Cetacean was stranded in Brandon Bay, county Kerry, about three years since. The head was photographed on the spot, and the drawings were made from the photographs.

April 2nd, 1868.

George Bentham, Esq., President, in the Chair.

James Edmund Harting, Esq., and Thomas Howse, jun., Esq., were elected Fellows; and Mr. John Jackson, Mr. William Mudd, and Mr. Charles William Peach, Associates.

The following Report on the Additions to the Library since the last meeting, was read:—

The Publications of Scientific Bodies received since the last meeting have been the following:—

GERMANY:—

Academy Naturæ Curiosorum, Dresden. Transactions (Nova Acta) xxxiii. Proceedings (Leopoldina) v. n. 9 to 15, vi. n. 1.

NORTH AMERICA:—

Nova-Scotian Institute of Natural Science. Proceedings and Transactions ii. part 1.

GREAT BRITAIN:—

Royal Horticultural Society. Journal ii. n. 5.

Pharmaceutical Society. Journal and Transactions, 2nd Ser. ix. n. 10.

Cambridge Philosophical Society. Transactions x. part 2, and xi. part 1.

Geological and Polytechnic Society of the West Riding of Yorkshire. *Proceedings 1867.

The current numbers of the Journals and Serials taken in by the Society are on the table.

The papers on recent Biology contained in the above, and the separate works added to the Library, are as follows:—

MAMMALOGY AND GENERAL ZOOLOGY:—

B. Gilpin. On Nova-Scotian Mammals. Nov. Scot. Instit. Proceed. ii.

J. E. Gray. On the Geographical distribution of *Balœnidæ*. Ann. Nat. Hist. Ser. 4, i.

Capt. Hardy. On the Beaver in Nova Scotia. Nov. Scot. Instit. Proceed. ii.

G. M. Humphry. On the growth of the jaws, 1 plate. Cambr. Philos. Soc. Trans. xi.

ORNITHOLOGY:—

E. Baldamus. On the propagation of the European Cuckoo. (Translated from the Naumannia for 1853.) Zoologist, Apr. 1868.

J. Van der Hoeven. Notes on *Dromas Ardeola*, Payk. Nov. Act. Acad. Nat. Cur. xxxiii.

ICHTHYOLOGY:—

J. Ambrose. On the Fishing-grounds and Fishes of St. Margaret's Bay. Nov. Scot. Inst. Proceed. ii.

J. B. Gilpin. On the Food Fishes of Nova Scotia. Nov. Scot. Instit. Proceed. ii.

A. Günther. Description of two new Gobioid Fishes from Sarawak, 1 plate. Ann. Nat. Hist. Ser. 4, i.

R. Owen. The dental characters of genera and species, chiefly of Fishes. (Reprint from the Trans. Odontol. Soc.) 15 plates, 8vo. Presented by the Author.

ERPETOLOGY:—

S. Haughton. On the muscular anatomy of the Alligator. Ann. Nat. Hist. Ser. 4, i.

ENTOMOLOGY:—

Carus. On N. Wagner's discovery at Kasan of Insect-larvæ,

which propagate without passing into the state of perfect Insects. Acad. Nat. Cur. Leopoldina v.

L. Landois. Anatomy of the Dog-Flea (*Pulex Canis*, Dugès), 7 plates. Nov. Act. Acad. Nat. Cur. xxxiii.

F. Leydig. The Ovarium and Seed-pouch of Insects, 5 plates. Nov. Act. Acad. Nat. Cur. xxxiii.

L. W. Schaufuss. Monograph of the *Scydmænidæ* of Central and South America, 4 plates. Nov. Act. Acad. Nat. Cur. xxxiii.

Lower Orders of Animals :—

H. J. Carter. On a variety of *Spongilla Meyeni* from Devonshire. Ann. Nat. Hist. Ser. 4, i.

J. E. Gray. On the structure and functions of the Spicules of *Hyalonema*. Ann. Nat. Hist. Ser. 4, i.

E. Grube. Zoology of the Voyage of the Novara, Annelides. 4 plates, 4to. Purchased.

E. R. Lankester. On Lithodomous Annelids, 1 plate. Ann. Nat. Hist. Ser. 4, i.

Phænogamic Botany :—

P. Ascherson. Preliminary sketch of a review of Phænogamous Marine Plants. Linnæa xxxv.

C. Bayley. Notes on varieties of *Sarothamnus scoparius*, Koch, and *Stachys Betonica*, Benth. (From Mem. Lit. Philos. Soc. Manchester.) Presented by the Author.

J. v. Dorner. The *Cuscutæ* of the Hungarian Flora. Linnæa xxxv.

A. Engler. Contributions to the Natural History of Saxifrages, 2 maps. Linnæa xxxv.

C. Hasskarl. Remarks on some Indian plants, with characters of new species. Flora 1868.

F. W. Klatt. Contributions to the knowledge of *Irideæ*, and diagnoses of new species (2 articles). Linnæa xxxv.

H. G. Reichenbach. *Ephippianthus*, a new genus of Orchids. On the Orchideous genera of Loureiro. Flora 1868.

G. Schweinfurth. Enumeration and description of the species of *Acacia* of the Nile district, 19 plates. Linnæa xxxv.

L. Wittmach. On *Musa Ensete*, 1 plate. Linnæa xxxv.

Physiological and Miscellaneous Botany :—

C. C. Babington. A Syllabus of Lectures on Botany. 8vo. Presented by the Author.

F. Buchanan. Effects of Lightning on *Quercus pedunculata*, Ehrh. Nov. Act. Acad. Nat. Cur. xxxiii.

Gasparrini. On the ripening of Figs. (Translation, see above p. xlv.). Journ. R. Hort. Soc. ii.

Prof. Münter. Raw and manufactured products of Palms in the Paris Exhibition 1867. Flora 1868.

Cryptogamic Botany:—

F. Arnold. Lichenological Fragments, 1 plate. Flora 1868.

E. Hallier. Microscopical Researches on *Micrococcus*. Flora 1868.

J. Müller. Four Lichens from the canton of Bern. Flora 1868.

W. P. Schimper. Supplement to the genus *Spiridens*, 1 plate. Nov. Act. Acad. Nat. Cur. xxxiii.

Miscellaneous:—

C. Collingwood. Rambles of a Naturalist on the shores and waters of the China sea. 1 vol. 8vo. Presented by the Author.

Zoology of the Voyage of the Erebus and Terror, parts 5 and 8 (wanting in the Society's copy). Presented by Dr. J. E. Gray.

Geological Magazine, vols. 1 and 2 (completing the Society's series). Purchased.

The following papers were read, viz.:—

1. "Contributions towards a Monograph of the species of Annelides belonging to the *Amphinomacea*; with a List of the known species and Descriptions of several new species, belonging to the group, contained in the National Collection of the British Museum; to which is appended a short account of two hitherto nondescript Annulose Animals of a larval character," by William Baird, M.D., F.R.S., F.L.S.

2. "The effects of Selection in the cultivation of Plants," by James Buckman, F.L.S., late Professor of Botany and Rural Economy in the Royal Agricultural College.

April 16th, 1868.

George Bentham, Esq., President, in the Chair.

Henry Collinson, Esq., and Swann Hurrell, Esq., were elected Fellows.

The following Report, on the Additions to the Library since the last meeting, was read:—

The Publications of Scientific Bodies received since the last meeting have been the following:—

Russia:—

Imperial Society of Naturalists of Moscow. Bulletin 1867, i. part 2.

Germany:—

Royal Horticultural Society of Berlin. Journal (Wochenschrift) 1867, n. 27 to 52.

Natural-History Society of Brünn. Proceedings (Sitzungsberichte) 1866. Transactions (Verhandlungen) v.

Physico-Medical Society of Würzburg. *Natural-History Journal (Zeitschrift) vi. 4.

Belgium:—

Royal Academy of Sciences, Brussels. Transactions 4to (Mémoires Couronnés et Mémoires des Savants Étrangers), xxxiii. Transactions 8vo (Mémoires Couronnés et autres), *xix. *xx. Proceedings (Bulletin) xxiv. *Annuaire 1868. *Annales Météorologiques 4to, first year (1867).

Australia:—

Royal Society of Victoria. Transactions viii.

Great Britain:—

Royal Society. Catalogue of Scientific Papers 1800 to 1863. 4to, i. Proceedings xvi. n. 100.

Royal Medical and Chirurgical Society. *Proceedings xvi. n. 1.

Royal Microscopical Society. Transactions and Quarterly Journal xvi. n. 30.

Quekett Microscopical Club. Journal n. 2.

Holmesdale Natural History Club, Reigate. Proceedings 1865 to 1867.

Current numbers of various periodicals received by the Society are also on the table.

The papers contained in the above on recent Biology, and the separate works added to the Library, are as follows:—

MAMMALOGY AND GENERAL ZOOLOGY :—

M. E. Cooke. On the hairs of Indian Bats. Journ. Quek. Microsc. Club i.

M'Coy. On the species of *Phascolomys*. (Abstract.) R. Soc. Victoria Trans. viii.

J. B. v. Masius. On the ano-spinal centre in Animals. R. Acad. Sc. Brussels Bull. xxiv.

F. Plateau. On the vision of Fish and Amphibia. R. Acad. Sc. Bruss. Trans. 4to, xxxiii.

ORNITHOLOGY :—

A. R. Wallace. A theory of Birds' Nests. Journ. Trav. Nat. Hist. i.

ICHTHYOLOGY :—

A. J. Malmgren. The Fish-fauna of Spitzbergen. 8vo. (From the Proc. R. Acad. Sc. Stockh.) Presented by the Author.

F. Plateau. On the vision of Fish and Amphibia. R. Acad. Sc. Brus. Trans. 4to, xxxiii.

ERPETOLOGY :—

T. Haslinger. On the Snakes of Moravia. Nat. Hist. Soc. Brünn Proc. 1866.

ENTOMOLOGY :—

C. H. Boheman. The Insect-fauna of Spitzbergen. 8vo, 1 plate. (From the Proc. R. Acad. Sc. Stockh.) Presented by Dr. Malmgren.

F. de Castelnau. Notes on Australian Coleoptera. R. Soc. Victoria Trans. viii.

A. Gärtner. Lepidopterological Notes. Nat. Hist. Soc. Brünn Trans. v.

T. Kettner. List of Coleoptera found about Boskowetz. Nat. Hist. Soc. Brünn Trans. v.

J. Linnell, jun. Lists of Coleoptera. Presented by the Holmesdale Natural-History Club.

T. W. Monfor. On certain Butterfly-scales characteristic of sex, 1 plate. R. Microsc. Soc. Trans. xvi.

C. Wesmael. Ichneumonologica documenta, 1 plate. R. Acad. Sc. Brussels Bullet. xxiv.

MOLLUSCA :—

G. S. and E. Saunders. Lists of land and freshwater Mollusca. Presented by the Holmesdale Natural-History Club.

CRUSTACEA :—

T. Rupert Jones. Bivalved Entomostraca, recent and fossil. R. Microsc. Soc. Trans. xvi.

LOWER ANIMALS :—

J. Kalmur. On Trichinosis in Brünn. Nat. Hist. Soc. Brünn Trans. v.

PHÆNOGAMIC BOTANY :—

J. A. Brewer. Flora of Surrey, 12mo. Presented by the Holmesdale Natural-History Club.

H. F. Hance. Note on a Chinese *Chamæraphis*. Seem. Journ. Bot. vi.

F. v. Herder. Plantæ Raddeanæ Monopetalæ (continued). Soc. Imp. Nat. Mosc. Bullet. 1867, i.

F. W. Klatt. Enumeration of Messrs. Schlagintweit's Primulaceæ, Pittosporeæ, and Irideæ, 1 plate. Seem. Journ. Bot. vi.

C. Koch. Review of Dracænas cultivated in gardens. Review of climbing Loniceras. On *Cochliostema Jacobianum*, sp. n. R. Hort. Soc. Berlin Journal 1867.

W. Lauder-Lindsay. Contributions to New-Zealand Botany. 4to, 4 plates. Presented by the Author.

E. Lindemann. Florula Elizabethgradensis. List of plants to be erased from the Flora Rossica in consequence of the cession of the North-American possessions. Soc. Imp. Nat. Mosc. Bullet. 1867, i.

C. J. Maximowicz. Diagnoses Plantarum novarum Japoniæ. Ann. Sc. Nat. Par. Bot. Ser. 5, vii.

W. T. R. Suringar. *Lilium Wittei*, a new Japanese species. R. Hort. Soc. Berlin Journ. 1867.

PHYSIOLOGICAL AND MISCELLANEOUS BOTANY :—

M. B. Corenwinder. Chemical researches on the functions of leaves. Ann. Sc. Nat. Par. Bot. Ser. 5, vii.

Fritz Müller. On the sexual relations of some Brazilian plants. Bot. Zeit. 1868.

J. L. Soubeiran and A. Delondre. On the vegetable products of Portugal in respect of Alimentation and Materia Medica. (From Bull. Soc. Imp. Acclimat.) Presented by the Authors.

CRYPTOGAMIC BOTANY :—

I. Carroll. Contributions to British Lichenology. Seem. Journ. Bot. vi.

C. Collingwood. On the Microscopical Algæ which cause discoloration of the sea in various parts of the world, 1 plate. R. Microsc. Soc. Journ. xvi.

A. Famintzin and J. Boranetsky. On the development of gonidia and formation of zoospores in Lichens. (Translation.) Bot. Zeit. 1868.

J. M. Fries. Enumeration of the Lichens of Spitzbergen. (From R. Acad. Sc. Stockh. Trans.) 4to. Presented by Dr. Malmgren.

Dr. Hermann. On the cultivation of the glaucogonidia of *Peltigera canina*, 1 plate. Bot. Zeit. 1868.

J. Kalmus. Precursory notes on the cryptogamic Flora of Moravia and Austrian Silesia (Mosses). Nat. Hist. Soc. Brünn Trans. v.

W. Lauder-Lindsay. On the present use of Lichens as Dye-stuffs. Seem. Journ. Bot. vi.

E. O. Meara. On new species of Diatomaceæ. R. Microsc. Soc. Trans. xvi.

W. Mitten. New or rare British Mosses, 1 plate. Seem. Journ. Bot. vi.

G. v. Niessl. On hybrid Cryptogams. Nat. Hist. Soc. Brünn Proceed. 1866.

W. Nylander. Prodromus Floræ Novo-Granatensis, Lichenes, Additamentum. Ann. Sc. Nat. Par. Bot. Ser. 5, vii.

H. J. Slack. On a microscopic Ferment found in red French wine. R. Microsc. Soc. Trans. xvi.

The following papers were read, viz.:—

1. "Note on the Structure of *Genista tinctoria*, as apparently affording facilities for the intercrossing of distinct flowers," by the Rev. George Henslow, M.A., F.L.S.

2. "On the variations of the Angular Divergences of the Leaves of *Helianthus tuberosus*," by the same.

May 6th, 1868.

George Bentham, Esq., President, in the Chair.

Dr. William C. H. Peters, of Berlin, was elected a Foreign Member.

The following Report, on the Additions to the Library since the last meeting, was read:—

The Publications of Scientific Bodies received since the last meeting have been the following:—

France:—

Société Botanique de France. Bulletin xi. Report of the Session at Toulouse, in 1864, and Bibliographical Review, 1867, F.

Imperial Academy of Sciences &c. of Lyons, Class of Sciences. Transactions (Mémoires) xvi.

Dutch Netherlands:—

Netherlands Entomological Society. Journal (Tijdschrift) Ser. 2, ii. parts 2 to 6, iii. part 1.

Great Britain:—

Geological Society. *Quarterly Journal xxiv. part 2.

Royal Agricultural Society. *Journal, Ser. 2, iv. part 1.

Pharmaceutical Society. *Journal and Transactions, Ser. 2, ix. n. 11.

The current numbers of the periodicals and serials taken in by the Society and the Journal of the Linnean Society ix. n. 40 are also on the table.

The papers in recent biology contained in the above, and the separate works added to the Library, are as follows:—

Mammalia and General Zoology:—

A. Macalister. Contributions towards the formation of a correct system of muscular homologies. Ann. Nat. Hist. Ser. 4, i.

St. G. Mivart. Osteology of Insectivora. (Translated from Journ. Anat. Phys. Cambr.) 3 plates. Ann. Sc. Nat. Par. Ser. 5, Zool. viii. 4.

Ornithology:—

J. Gould. Descriptions of two new Humming-birds. Ann. Nat. Hist. Ser. 4, i.

Ibis, new series, iv. n. 14.

Ichthyology:—

J. C. Schiödte. Development of the position of the eye in *Pleuronectidæ*. Ann. Nat. Hist. Ser. 4, i.

ENTOMOLOGY:—

H. W. Bates. Catalogue of Erycinidæ. Journ. Linn. Soc. Zool. ix.

Mulsant. Monograph of Coccinellidæ (continued). Acad. Imp. Lyons Mém. xvi.

A. Murray. List of Coleoptera from Old Calabar, 1 plate. Ann. Nat. Hist. Ser. 4, i.

E. Saunders. Descriptions of fifty new species of *Stigmodera*. Journ. Linn. Soc. Zool. ix.

S. C. Snellen v. Vollenhoven. Entomological fauna of the Archipelago of the Dutch Netherlands (*Pentatomidæ*). Part 1. 4to, 4 plates. Presented.

Journal of the Netherlands Entomological Society, Ser. 2, ii. 2 to 6, and iii. 1.

Entomologist's Monthly Magazine for May.

MALACOZOOLOGY:—

S. Hanley. On a rare Indian *Clausilia*. Ann. Nat. Hist. Ser. 4, i.

T. G. Ponton. On some species of *Oliva* recently described by Mr. F. P. Marrat. Ann. Nat. Hist. Ser. 4, i.

Journal de Conchyliologie, Ser. 3, viii. n. 2, 3 plates.

LOWER ANIMALS:—

G. Seguenza. On *Ellipsoidina*, a new genus of Foraminifera, with notes, by H. B. Brady, 1 plate. Ann. Nat. Hist. Ser. 4, i.

PHÆNOGAMIC BOTANY:—

P. v. Brassai. On *Orobus canescens* and other plants (a controversial article on species). Translated from the Hungarian. Linnæa xxxiv.

J. Hanstein. Review of *Gesneraceæ* (concluded). Linnæa xxxiv.

J. E. Planchon. On *Pistacia Narbonensis* of authors. Bull. Soc. Bot. Fr. xi.

W. W. Saunders. Refugium Botanicum. Figures and descriptions, by various Botanists, from living specimens, of little-known or new plants. 24 plates, large 8vo. Presented by the Editor, W. W. Saunders, Esq.

E. Timbal-Lagrave and others. Various notes on plants of the Pyrenæan region, and descriptions of new (critical) species. Bull. Soc. Bot. Fr. xi.

VEGETABLE PHYSIOLOGY:—

E. Filhol. On the constitution of chlorophyll, and on the colouring-matter in flowers. Bull. Soc. Bot. Fr. xi.

MISCELLANEOUS:—

E. Lartet and H. Christy. Reliquiæ Aquitanicæ. Part 5, 4to, 6 plates. Presented by the Executors of the late H. Christy.

Series of 34 Reports on the Forests, Timber-trees, and Forest Administration of India. Folio, 4to, and 8vo, 1856 to 1867. Presented by order of the Secretary of State for India in Council.

The following papers were read, viz.:—

1. "A brief account of the chief Enemies destructive of the Coffee-plant," by Surgeon John Shortt, M.D., F.L.S., &c.

2. "On the Silkworm-Oaks of Northern China," by Henry T. Hance, Ph.D. Communicated by J. D. Hooker, M.D., V.P.L.S., &c.

3. "On some new forms of Trichopterous Insects from New Zealand; with a List of the Species known to inhabit those Colonies," by Robert MacLachlan, Esq., F.L.S., Sec. Entomol. Soc.

4. "Notes on *Jussiæa*," by Mr. Charles Wright. Communicated by Dr. Hooker.

5. "Notulæ Capenses," by P. MacOwan, B.A. Communicated by Dr. Hooker.

6. "On the germination of *Orchis Morio*; with some remarks on the Embryos of the Cryptogams," by Benjamin Clark, Esq., F.L.S.

7. "Experiments in Pruning, with a view to the production of varieties, especially in *Zea Mays*; and remarks on certain analogies occurring in the Animal Kingdom, including notices of Diseases connected with the growth of Fungi," by the same.

May 25, 1868.

Anniversary Meeting.

George Bentham, Esq., President, in the Chair.

This day (the Anniversary of the birth of Linnæus having fallen on a Sunday) being the day appointed by the Charter for the Election of Council and Officers, the President opened the business of the Meeting with the following Address:—

GENTLEMEN,

MY annual Report on the state and proceedings of our Society might be made almost in the same words, and with nearly the same satisfactory figures, as last year. Our publications have been equally extensive, entailing an expenditure of about £760; £82 have been applied to the purchase and binding of books, and £200 have been added to our invested capital, which now amounts to £1800. We are now subject to some temporary inconvenience from the darkening of our rooms by the new building of the Royal Academy; but I understand that all the difficulties which stood in the way of the proposed new wings and façade towards Piccadilly have been got over, and that the work will shortly be commenced. I trust, therefore, that our new appartments will be ready for us before we are obliged to vacate our present ones.

I propose in the following address to lay before you a sketch of the progress of biological science during the two years that have elapsed since my last review in my Address of 1866; and for this purpose I have again been enabled to avail myself of the kind assistance of Mr. W. S. Dallas, to whom I am indebted for the zoological information contained in the following pages. In a few occasional notes on the value of some of the various contributions made to our science, I have endeavoured to keep in mind the three great aims of the working naturalist:—1st, the accurate observation and delineation of facts, morphographic or biographic; 2nd, the coordination of these facts; and, 3rd, their generalization, this being the only course of proceeding which safely tends to a real advance in our knowledge of the phenomena of organic life. In the present state of science, the second process, the careful coordination of facts and observations, becomes daily more important. Individual species, subspecies, or varieties are described, individual observations are committed to print, in such endless variety and confusion, with repetitions so frequent, in publications so varied, that the general naturalist is little disposed to waste time in searching them out, until they are more or less collected, methodized, and compared with their nearest allies. Hence it is that Faunas or Floras, complete as to any special branch of either great class of beings, monographs of orders, tribes, or other large groups, connected treatises on special series of biological phenomena, even of very limited range, if carefully and comparatively worked out, are of infinitely greater value than long descriptions of new species, or of isolated experiments or observations in however

great a number they may be strung together, without arrangement or comparison. It has been very much the custom, for instance, for foreign botanic gardens to append to their catalogues so-called diagnoses of species of plants, which the director or curator had received under false names, or had been unable to determine, or which had become modified by cultivation, or which for any other reason have been supposed to be new. The consequence is that, from the times of Willdenow, Link, and Desfontaines to the latest lists of seeds or catalogues of German, Russian, or Italian Botanic Gardens, there has been no more fruitful source of the undeterminable puzzles which encumber our systematic works than these diagnoses which are not diagnostic. I shall not, therefore, detain you by any detailed enumeration of such works, or of detached descriptions of plants, insects, &c., brought from distant countries, and supposed to be new, because the describer could not or would not take the trouble of identifying them; nor shall I specially mention accounts, of botanical and entomological excursions, descriptions of, and dissertations on, critical species and hybrids, records of reappearances of rare animals and plants in particular districts, and similar notes; for although I fully admit the value of observations of detail, if accurate, as the groundwork of all that is valuable in the science, yet they require consolidation and comparison before they can contribute essentially to its advancement. Still less shall I attempt to dwell upon purely speculative works, such as proposals for new classifications, according to some special theory of the author, or perhaps founded upon some class of organs to which he has paid exclusive attention. In plants alone three or four such have been broached within the last two years, not one of them having the least chance of being adopted. My present object is, indeed, merely to give a general sketch, so far as my information extends, of the comparative activity of naturalists in the different countries where the study of Biology is prosecuted, commencing with Northern Europe and ending with our own country. For further details I have great satisfaction in referring in Zoology to the comprehensive Record of Zoological literature mentioned in my Address of 1866, and of which the volumes for 1865 and 1866 have since appeared, affording a fair promise that this most valuable repertory will be steadily continued. Unfortunately we have as yet nothing of the kind in Botany, the best Catalogue Raisonné of current botanical literature being perhaps the Revue Bibliographique of the Bulletin de la Société Botanique de France. That is, however, necessarily in a great measure

incomplete and unmethodical, containing chiefly detached sketches of the contents of the works sent to the Society, with occasional mention of such as may otherwise have been brought under the editor's notice.

Denmark.

Professor Steenstrup, of Copenhagen, has published, in the Bulletin de la Société Ornithologique Suisse, a valuable dissertation on the Great Auk, entitled "Matériaux pour servir à l'histoire de l'*Alca impennis*," in which he has brought together all the accessible particulars as to the former distribution and history of this interesting bird, now believed to be extinct. It is followed by a supplementary note, by M. V. Fatio, on the extant specimens of the bird and its egg.

Professor Schiödte has published a paper, translated in the Annals and Magazine of Natural History, on the mode in which one of the eyes is transferred from one side of the head to the other in the young of *Pleuronectidæ*, confirming to a certain extent the views of Dr. Traquair, published in the 25th vol. of our Transactions. He has observed the eye, in the course of transfer, passing round the upper surface of the head, thus disposing of the opinions of those writers who have maintained that the eye passes as it were directly through the head; but at the same time he affirms that the eye passes always in front of the dorsal fin, and afterwards glides backward upon the surface so as eventually to lie behind the commencement of the dorsal. The same Professor's treatise on the sucking mouth of the Cymothoæ is an important contribution to the morphology of the mouth of Crustacea. Messieurs Bergsöe and Meinert have drawn up a joint monograph of Danish Geophilidæ; Professor Meinert alone has given an excellent memoir on the Campodeæ, as he calls the family to which Mr. Halliday's genus *Iapyx* belongs, containing observations of importance on general entomology. M. H. Krabbe has published the results of some experimental researches upon Helminthology made at Copenhagen and in Iceland, which are particularly valuable in a statistical point of view.

In Botany, M. Œrsted has published, in the Royal Danish Transactions, a detailed account of the experiments by which he proved that *Rœstelia cancellata* and *Podisoma Sabini* were successive states of the same fungus on different plants, and he has since carried out his experiments as to two other species of the same supposed two genera. He has also continued some descriptions of his Central-American plants, and attempted a new classification of the genera

Quercus, *Castanea*, and their allies. Whether his genera prove to be more satisfactory than those previously adopted or proposed remains to be ascertained. Probably the whole are best considered one large natural genus, divisible into sections more or less definitely circumscribed; but Œrsted's primary division, derived from the styles, appears to be at once more definite and more natural than any previous one.

Sweden.

Professor Malm's 'Monographie illustrée du Baleinoptère' is a most interesting account of the great Rorqual captured on the Swedish coast, with an admirable description of its structure, illustrated by woodcuts and photographs. M. Wallengren has inserted a memoir on the Heterocerous Lepidoptera of Caffraria, in the Transactions of the Royal Swedish Academy. Dr. Stål has completed his work entitled 'Hemiptera Africana.' The 8th and 9th volumes of C. G. Thomson's 'Skandinaviens Coleoptera' have recently appeared, and Messrs. Malmgren and Kinberg have communicated to the Royal Swedish Academy papers containing descriptions of numerous species and new genera of Annelides.

The botanical contributions most worthy of notice are:—Anderson's sketch of the vegetation of Sweden, chiefly as to cultivated plants, translated in the Annales des Sciences Naturelles; and O. Norstedt's observations on the germination of Characeæ, in the Lund Transactions for 1865, but not, as far as I am aware, actually published till 1867. Th. M. Fries has also published, in the Transactions of the Royal Swedish Academy, an enumeration of the lichens of Spitzbergen, remarkable for the great number of species found in those high latitudes, even at an elevation of 2300 feet.

Russia.

Russian naturalists have been chiefly engaged in the investigation of the natural history of the remote provinces of their vast empire. Early in 1866 a report reached St. Petersburg that a native trader had ascertained the existence of the remains of a Mammoth, with the skin and soft parts still perfect, in a ravine on one of the bays of the estuary of the Ob; and this report seemed sufficiently authenticated to justify the Academy in the immediate despatch of a scientific expedition to examine the remains *in situ*, and bring them over to the capital. Magister F. Schmidt, who was already personally

acquainted with the natural history and, especially, the botany of Northern Siberia, offered himself for the purpose, and was expedited under the sanction and with the aid of the Government. V. Baer, in laying before the Academy the instructions given to M. Schmidt, entered into a detailed review of all that was more or less authenticated relating to previous discoveries of Mammoth-remains in the frozen regions of Northern Siberia, which, as well as the subsequent communications from M. Schmidt, is published in the Proceedings of the Academy. The reports proved to have been highly coloured. Nothing had been found but detached bones and portions of skin and flesh. M. Schmidt appears, however, to have collected numerous data bearing upon the question discussed by V. Baer:—Did these animals ever live in those high northern latitudes? or were their remains brought down in a half-decayed state with the huge masses of ice borne by the floods of these great rivers, and prevented from further decay by becoming buried in frozen masses until accident again exposed them?—the fleshy parts when discovered having been invariably in a state of putrefaction. My friends in St. Petersburg inform me that M. Schmidt is preparing for immediate publication the natural-historical results of this expedition, which, however, are richer in botany than in zoology.

Dr. Strauch has published, in the Mémoires de l'Académie de St. Pétersbourg, a synopsis of the living species of Crocodiles, with especial reference to those represented in the Museum of St. Petersburg; Dr. Brandt, in the Bulletin, a paper on the Dodo; and Professor Kowalewski, in the Mémoires, one on the development of the Ctenophora. Various papers on Russian Entomology have appeared in the Bulletin de la Société Impériale des Naturalistes at Moscow; and the 'Horæ Entomologicæ' of the St. Petersburg Entomological Society are actively continued.

The botanical establishment at the Imperial Botanical Garden at St. Petersburg has been entirely reorganized under the active direction of M. Trautvetter; and by attaching to it three head botanists, for the three several departments of systematic, physiological, and cultural botany, he hopes to give a great impulse to the study of the science. In the meantime Trautvetter himself, Regel, Ruprecht, and v. Herder have been working up the extensive contributions to the floras of different provinces of their vast territories which had been lying waste in their herbaria, especially those of Schrenck, Radde, Semenow, &c. Maximowicz, whose travels in Mandschuria and Japan had produced such rich materials, has been retarded in

the publications he was preparing by the state of his health, which obliges him temporarily to seek a milder climate. Rosanoff, said to be a young man of great promise just appointed to the place of physiological head botanist, is the author of some morphological and development papers. Famintzin and Baranetzki have published, in the Bulletin of the Academy, papers on the development of gonidia in Lichens, in which they notice the formation of zoospores within the gonidia in genera standing so wide apart in the system that they expect to meet with similar results in other lichens. They have also observed the transformation of these gonidia into bodies heretofore supposed to belong to the freshwater unicellular Algæ—a transformation also observed by Dr. Itzigsohn. These papers of Messrs. Famintzin and Baranetzki, as well as others by M. Famintzin, on the action of light on various Mosses and Algæ, and on the coloration of leaves, have been more or less reproduced in the Botanische Zeitung, and in the Annales des Sciences Naturelles. M. A. Fischer v. Waldheim has inserted, in the Moscow Bulletin, a detailed paper on the spores of Ustilagineæ.

Dutch Netherlands.

M. F. B. L. Pollen, since his return from Madagascar, whither he was accompanied by M. van Dam, has devoted a considerable portion of his time and means to the investigation of the natural history of that island, and is now directing his attention particularly to the Lemuridæ, which seem there to have their headquarters. He has, however, published only a first part of his 'Contributions à l'Histoire Naturelle des Lemuriens,' in the largest folio. This first part consists only of a single plate with a life-size figure of a species of *Microcebus*, with a descriptive text. M. Pollen is also preparing an account of his expedition, accompanied by "Recherches sur la Faune du Madagascar et de ses dépendances," in which he is assisted by some of the first zoologists of Holland and Belgium. Already two parts, relating to Mammalia and Birds, by Schlegel, have appeared. Professor Schlegel's 'Revue critique et méthodique du Muséum des Pays-Bas' has been continued; and the same distinguished zoologist has produced three parts of a work on the Birds of Netherlands-India (Vogel van Nederlandsch Indië) containing admirable monographic revisions, illustrated with fine plates of separate groups of Dutch-Indian birds. Dr. Bleeker has completed his great 'Atlas Ichthyologique des Indes Orientales Néerlandaises;' and Dr. Snellen v. Vollenhoven has issued the third part of his

'Faune entomologique de l'Archipel Indo-Néerlandais,' containing descriptions and figures of numerous species of Pentatomides.

The Botanical works of general interest are chiefly those of Professor Miquel, or published under his direction in the Annales Musæi Lugduno-Batavensis, now in its third folio volume. There are here collected several partial monographs of plants belonging chiefly to the Dutch East-Indian possessions. The greater part, however, of the second and third volumes is occupied by Miquel's own "Prolusio Floræ Japonicæ" (enumerations of the rich collections of Japanese plants in the Leyden Herbarium, with descriptions of new species and genera), forming a valuable repertory of materials for a Flora Japonica, expounded by a botanist of great talent and ability, but which would have been still more valuable had he bestowed the necessary time to introduce more method and given us a complete systematic enumeration of all that is known on that most interesting flora, connected as it is with those of Asia, on the one hand, and of North America, on the other. It is to be regretted also that new genera and species have sometimes been hastily proposed from insufficient data. In the present day it is not only useless, but detrimental to science to establish, for instance, new genera of Umbelliferæ without having seen the fruit. Dr. Miquel has, however, added to his otherwise important labours an interesting essay on the connexion of the flora of Japan with that of other countries.

Belgium.

The only Memoranda I have of recent Belgian Biological papers of general interest are v. Beneden's on the Polyps of the Belgian coasts, and portions of M. d'Udekem's monograph of the Oligochæta, in the Memoirs of the Belgian Academy of Sciences.

Germany.

Ernst Haeckel's 'Generelle Morphologie der Organismen,' or General Morphology of Organisms, with the fuller title of 'General Principles of the science of organic forms, mechanically established according to the reformed descent-theory of Charles Darwin,' 2 vols. 8vo, Berlin, 1866, is a work displaying great ability, thought, and philosophical method, and throwing considerable light on the general connexion of organic beings, and the various points of view from which they should be studied. If there may be perhaps in some parts too much of German philosophical speculation and lengthiness, it appears on the other hand to be founded on great general

knowledge of the animal kingdom, as well as accurate and detailed observation of some of its branches. And I learn from Professor Huxley that, though still quite a young man, he is already well known for good work in the investigation of some of the lower branches of animals, especially Radiolaria.

I do not profess to have studied this work in detail; much of it relates to animal forms which are out of my special line: it may therefore seem presumptuous in me to offer any opinion upon it; yet there are a few of its general features well worthy of the consideration of all naturalists, upon which I might be allowed to make a few observations. The points I particularly allude to are:—1st, the general division of the science; 2nd, the relation of organisms to inorganic bodies; 3rd, the supposed mathematical fundamental forms of organisms.

Haeckel's first division of the science, irrespective of any special class of beings studied, is into Anatomy and Morphogeny, one volume being devoted to each. To Anatomy he gives a widely extended meaning, including everything relating to outward form of the individual or its parts, as well as their inner structure, in a complete state; whilst Morphogeny relates to the development of organisms. Anatomy is subdivided into promorphology or the study of outward form, and tectology or that of inner structure; and in Morphogeny he distinguishes the development of the individual and that of the *phylon* or race, a new name introduced to designate the succession of individuals supposed to have descended from any one of the few supposed primitive simple forms.

Further, in subdividing any of these branches, he rejects the old vague distinctions of histology, organology, and general morphology, and proposes six *form-individuals*, which he elsewhere terms *disciplines*, as separate subjects of study in the case of all organisms where they all exist at successive stages of development. It would be useless to translate here his definition of a form-individual, as it would require some study to understand it, and their enumeration will give at once a clearer idea of his meaning. They are:—

1. Plastides or cytodes and cells, cytodes being elementary particles without a nucleus, whilst cells proper are furnished with a nucleus.

2. Organs, compounded of cells in various degrees of complexity.

3. Antimeres, or homotypical laterally opposed parts—the rays of Radiolaria, the symmetrical halves of bilateral animals.

4. Metameres, or homodynamic consecutive parts—the segments,

rings, or zonites of Vertebrata and Articulata, the articles or internodes of phænogamous plants.

5. Persons or Prosopes—individuals in the limited sense of the word as to the higher animals, buds or gemmæ of plants and Cœlenterata.

6. Corms, stocks, or colonies—compound organisms, such as trees and perennial plants, chains of Salpæ, stocks of Polypes, &c.

These six forms, he tells us, are so many grades of development, through which every individual has to pass to attain the higher ones, commencing with the ovum in its primitive state as a simple cell and passing successively through the following ones. The cells multiply and are developed into organs, the sets of organs become arranged into antimeres, these are divided into metameres, and constitute the complete individual of the fifth grade, or are further developed into the compound corm of the sixth; and any one grade may be the permanent form of an individual through life. Thus some of the Algæ, and others of the lowest forms of organisms, are arrested at the first grade of the simple cell; the majority of the higher animals are complete with the fifth form; and the majority of plants and Cœlenterata attain the sixth, others again, according to Haeckel, being arrested in the state of more or less complex organs, antimeres or metameres.

There seems no doubt that this logical distribution of the subject, carefully studied in many of the points of view in which Haeckel has worked them out, may be of considerable service in investigating the complicated structure and relations of the higher organisms, although there are many of the details which appear to me open to criticism as more speculative than founded upon fact. The clear distinction between the fifth form or the individual in the ordinary sense of the term, and the more compound corm or sixth form, will serve especially to dispel much of the speculative obscurity in which the discussion as to what is an individual has been involved. The importance of the separate study of antimeres and metameres as different stages of development may, on the other hand, be too much insisted upon by Haeckel. In most cases their development appears to me to be rather simultaneous than consecutive, and that we may just as well say that the antimeres are made up of metameres as that the metameres are made up of antimeres. But perhaps these forms have acquired more than usual importance in Haeckel's mind from their bearing upon his reduction of the complicated forms of organisms to mathematical types.

To this investigation of the fundamental forms of organisms a considerable portion of the first volume is devoted, displaying great ingenuity, but apparently always dominated by the desire to compare the laws regulating the forms of organisms with those of crystallization of inorganic substances. Admitting, as he does, that the firm-fluid (festflüssig) consistence of organic matter produces those rounded surfaces, curved lines, &c. which are entirely wanting in crystals, and that the typical forms of organisms are subject to unlimited modifications through development, adaptation, and composition, he yet maintains that they are reducible, like crystals, to ideal, mathematical, angular or polyedric forms; and the principal ones of these typical forms are described in detail, and arranged in classes, families, genera, and species. The great fallacy that pervades this part of the work appears to me to lie in the inattention, in this instance, to that fundamental difference between the crystallized and the organized body which he elsewhere expounds—the former consisting of the aggregation of a number of angular elements, the latter of the development of a single globular or rounded cell, growing by expansion or emission from one or more points in the interior. In the former case, general form is more or less affected by that of the elements, and angularity is the rule; in the latter, it depends on the number, direction, relative position, and comparative extent of the emissions or points of growth, and angularity is the exception. In the great majority of organisms distinguished by Haeckel under the name of Axonia, there is a central axis growing longitudinally by the extension of the poles, and laterally in two opposite, or more than two radiating directions. When this growth is regular, a form is indeed produced so far mathematical, as the rays diverge at regular angles, and, growing to equal lengths, form a regular, more or less angular outline. In the Vertebrata there is also generally correspondence between the respective parts of the two opposite antimeres, which retain their parallelism with the axis; but there is great dissimilarity between the different parts of each antimere; and in plants the parallelism of the antimeres is usually disturbed by more or less of a spiral twist. As there is often some regularity in this disturbance, mathematical botanists have been able to establish more or less fixed laws of *phyllotaxis*, the study of which may some day lead to the investigation of the disturbing causes, of which we are as yet wholly ignorant. But to learn that the fundamental form of a Primrose is a regular five-sided pyramid, to be classed under the species Pentaclinota of the genus Isopola, belonging to the class of homostaurous

Stauraxonia—or that an Orchis is founded on a half six-sided amphithected pyramid—or that *Homo* and *Fumaria*, Man and Fumitory, are equally reducible to homopleurous Dipleura, of which the fundamental form is a simple pyramid, with two symmetrically equal lateral halves—appears to be far too fanciful to contribute much to the advance of our science, which, I can only repeat, is essentially a science of observation. We should, indeed, be disposed to class much of such speculation with that *Speciesspielerei* (or play at species) of museum-zoologists and herbarium-botanists against which Haeckel so indignantly protests, comparing it to the amusements of collectors of postage-stamps and similar trifles.

A proposition which is, I believe, more or less supported by some philosophical naturalists in this country, as well as on the continent, and much insisted upon by Haeckel, is that there is no such great difference as is commonly supposed between organic (meaning, I presume, living) and inorganic bodies, that the differences, indeed, are not absolute, but pass one into the other through intermediates. In support of this view he observes :—

1. That the idea of organism, as founded on morphological bases, now fails; for the definition of a living organized body as one which is composed of organs or definite heteromorphous parts working together for the benefit of the whole, is invalidated since we have become acquainted with numerous absolutely structureless and homogeneous plasma-bodies, which, from this supposed simplicity, he classes under the name of *Moneres*, such as *Protogenes*, *Protamœba*, &c. Can this absolute simplicity, however, be really predicated of his *Protogenes primordialis* and *Protamœba primitiva* described in the note to vol. i. p. 133? He could, indeed, detect no structure under the most powerful instruments; but these bodies absorbed nutriment, assumed an egg-like form, emitted and withdrew again one to three or four short processes, and finally separated into two halves, each of which gradually assumed the parental form, and emitted similar processes. Is not this evidence that a complex structure exists, although so exquisite as to escape detection by any means of observation at our disposal?

2. That in all the general fundamental properties of matter, there is not the slightest distinction between organisms (I presume always he means living bodies, not dead organic substances) and inorganic matter; that the reciprocal action of the attractive or cohesive force of the atoms of matter, and the repulsive force of the atoms of ether, are the same and are equally varied in both by the quantitative

diversity of the atoms; that both are equally affected by chemical agents, and especially by carbonic combinations; only, he afterwards adds, these carbonic combinations are much more complicated in organized than in inorganic bodies. But is not this very complication, by which the ordinary action of physical or chemical agents is checked or modified, one of the great and constant differences between the living and the inorganic body?

Rejecting, then, all distinctions derived from morphology or chemical action, Haeckel rests the definition of Organisms upon purely physiological grounds, giving it the following form:—"We call Organisms all those natural bodies which exhibit the peculiar active phenomena (Bewegungserscheinungen) of *life*, and especially the universal one of nutriment"—an excellent definition as far as it goes, and all we could wish for, but that he adds, in a note, "The three functions of nutrition, growth, and reproduction (Fortpflanzung) are commonly designated as the general active phenomena attributable to all organisms; we have not here adduced growth, because it occurs equally in inorganic individuals; nor reproduction, because it is wanting in many (asexual) organic individuals." He must, however, be aware that when growth is attributed to living and denied to inorganic bodies, what is meant is not growth in that comprehensive sense given to the word by Linnæus in the oft-quoted definition of "Lapides crescunt, &c.," but growth by intussusception and assimilation, as distinguished from external aggregation—a contrast well worked out, as characterizing the two great classes, by Haeckel himself (vol. i. p. 141 *et seq.*),—and that reproduction includes asexual as well as sexual reproduction.

With the above definition of an Organism, the whole of the arguments by which he attempts to show that there is a wider gap separating his Moneres from other organic bodies than from inorganic ones appear to me to fail, or to rest solely on the supposed absolute simplicity of these organisms. But the only evidence in favour of this simplicity and homogeneity is the negative one that our instruments can detect no internal structure, whilst the only positive one, the facts of their nutrition, division, development, and alterations of form, as in the *Protogenes* and *Protamœba* above alluded to, tells in the contrary direction.

As to the question of the autogony, spontaneous generation, or original formation of simple organisms out of inorganic matter, and the comparison between the formation of a primordial cell and an elementary crystal, notwithstanding the ingenuity of some of his

arguments, the whole appears to me to be so purely speculative, with the total absence of ascertained facts to rest any theory upon, that it seems out of our province to dwell upon it.

The really important part of Haeckel's work appears to be the second, or morphogenetic volume, or development of the theory of affinity derived from a common descent, which, as he truly says, has been more or less broached by various philosophical naturalists of the present century, but to which Darwin has first given us the key. The methodical views here displayed, notwithstanding their speculative tendency, require more study than I have as yet been able to bestow upon them; but a perusal of the principal chapters points out as the most remarkable parts the classification of the different modes of reproduction and development with reference to the six form-individuals distinguished in the first volume, the methodical exposition of the Darwinian laws of inheritance, variability, and selection, and the attempt at a classification of organisms according to what may, with more or less of plausibility, be conjectured as to their descent and succession through the various geological epochs. In all these cases the chief defect is, perhaps, too much of absolute dogmatism, without distinction of those different degrees of certainty, probability, or doubt so admirably discussed by Darwin. In the classification, the establishment of the intermediate class of Protista, for those comparatively simple organisms which appear to connect the lower animals with the lower plants, is an attempt, which may or may not be successful, at supplying more definite lines of demarcation than those which are now vainly sought for between the animal and vegetable kingdoms.

The repeatedly discussed question of species is here treated at some length. We can all argue as to the identity or distinction of species; but none of us can give a really definite reply to the question What *is* a species? Those who insist on the absolute fixity of the limits of species can give us no rule for the ascertainment of those limits which does not occasionally break down; those who deny that there are limits to species yet constantly speak of species as if they had limits. The object of a paper recently communicated by Darwin, and now printing in our journal, is to show that *Primula vulgaris*, *P. veris*, and *P. elatior*, Jacq., are distinct species; and Haeckel himself has frequently to speak of species like other naturalists. He argues, as others have done, that all morphological and physiological tests of species fail in particular instances, that the ordinary idea of a species is purely arbitrary and artificial (ii.

p. 340), but that species are (p. 353) genealogical individualities, subordinate to that of a phylon, which it is practically necessary and possible to distinguish and to name. Then follows his definition of a species, which I subjoin in a note, as to me it appears as difficult to translate as to apply practically when translated *.

Prof. C. Claus, of Marburg, has published a handbook to the ordinary classification of animals, under the title of 'Grundzüge der Zoologie,' in two vols. 8vo; and in a memoir on the Copepod Crustacea of Nice has shown a strong tendency to the adoption of Darwinian theories. The continuation by Dr. Gerstäcker of the Arthropod section of Bronn's 'Klassen und Ordnungen des Thierreichs,' mentioned in my address of 1866, advances but very slowly. Prof. Gegenbaur's latest work on Comparative Anatomy, 'Untersuchungen zur vergleichenden Anatomie der Wirbelthiere,' comprises two parts, the first relating to the carpus and tarsus, the second to the shouldergirdle of Vertebrata and the pectoral fins of fishes. Dr. Peters of Berlin, whose active services in the cause of zoology you have acknowledged by electing him to fill the last vacancy in the list of your foreign members, has recently published memoirs on the Aye-Aye, on Bats, and on Eared Seales. A posthumous memoir by the late H. Rathke, on the development and structure of the Crocodile, the last great work of its distinguished author, has been brought out, under the care of Dr. v. Wittich, in the Nova Acta Naturæ Curiosorum.

Kner and Steindachner have, in the Transactions of the Academy of Munich, described the new genera and species of fish from Central America collected by Moritz Wagner, who has himself added an Essay on the hydrographical conditions and on the geographical distribution of freshwater fishes in the states of Panama and Ecuador, containing several statements of considerable interest—amongst others, that there are some (although, he admits, very few) species quite identical in the marine estuaries of the opposite sides of the isthmus, contrary, he says, to the dictum of Darwin in the 'Origin of Species,' the merits of which work he otherwise fully

* "Die Species oder organische Art ist die Gesammtheit aller Zeugungskreise welche unter gleichen Existenzbedingungen gleiche Formen besitzen." If we render this as "the species is the sum of all the generation-cycles which, under similar conditions of existence, possess similar forms," the question suggests itself, What is a generation-cycle? In reading his long chapter on the subject, in the hopes of obtaining a clear explanation, I only felt more bewildered; nor can I find any clue to an important point in the definition—what degree of variation similarity admits of.

acknowledges. And in this case Darwin does not put the case so absolutely as indicated by Wagner; for his expression is, "No two marine faunas are more distinct, with *hardly* a fish, shell, or crab in common, than those of the eastern and western shores of South and Central America." This *almost* universal dissimilarity appears to be confirmed by Wagner; for I believe that his identical species of fish are confined to a single one.

Dr. Heller has communicated to the Academy of Sciences of Vienna a paper on the Amphipoda of the Adriatic. Amongst arachnologists, Dr. L. Koch has nearly completed a monographic treatise on the great family Drassidæ; Dr. A. Menge has commenced a very detailed revision of the Spiders of the Province of Prussia; the Zoologico-botanical Society of Vienna have published a posthumous monograph, by Dr. Prach, of the Thomisidæ of the neighbourhood of Prague; and the curious Bear-animalcules (Tardigrada or Arctiscoida), now referred by all zoologists to the Arachnida, have of late received considerable attention from Dr. R. Graeff, whose elaborate structural descriptions of these minute creatures are inserted in the Archiv für mikroskopische Anatomie.

In entomology, the Zeitschrift für wissenschaftliche Zoologie contains several anatomical papers, amongst which M. Weismann's on the metamorphosis of the Diptera are of particular value, and lead to new views on the nature of insect-metamorphosis in general; and M. Mecznikow's on the reproduction of *Aphides* maintains a view of these phenomena nearly in accordance with that so admirably set forth in our Transactions some years ago by Professor Huxley, and in contradiction to the opinions of M. Balbiani, communicated to the Academy of Sciences in Paris, who endeavours to prove that the viviparous individuals of those insects are to be regarded as true hermaphrodites (!). An excellent review of the whole subject is given by Prof. Claparède, of Geneva, in the Annales des Sciences Naturelles. The last volume of the Nova Acta Naturæ Curiosorum contains an elaborate paper by Dr. Leydig on the ovary and seminal receptacle in insects, and another by Dr. Landois on the Anatomy of *Pulex canis*.

A remarkable fossil insect has been described by Dr. A. Dohrn, in Dunker's 'Palæontographica,' under the name of *Eugereon Boeckingi*, which is cited by him in an interesting paper in the Stettiner entomologische Zeitung as an illustration of Haeckel's genealogical views. He includes the whole of the Orthoptera and Neuroptera of the old writers in an order to which he gives the name of Toroptera,

and which he regards as representing the earliest type of insect life. From it he assumes that the other two orders of masticant insects have proceeded very early, whilst the suctorial forms originated at a later period. But *Eugereon* combines the wing-characters of the Toroptera, with such a modification of the mouth-organs as to indicate pretty clearly an approach to the suctorial Hemiptera; and both Haeckel and Dohrn seem inclined to regard it as representing one of the stages in the branching-off of the latter from the main genealogical stem. In all such speculations, however, we must recollect how very scanty are the data upon which we can found them. The isolated forms the remains of which have been preserved to us in the formations of early geological periods probably represent but an infinitesimally small proportion of the varied organisms then existing, and, as observed by Haeckel in regard to the more numerous remains of shells, give us not only a totally inadequate, but, in many cases, an absolutely erroneous idea of the relative preponderance of the different classes of beings living at any one time.

Dr. Suffrian has completed his monograph of South-American Chrysomelidæ in the Linnæa Entomologica of Stettin. A new periodical, the Coleopterologische Hefte of E. v. Harold, does not confine itself to European forms, but promises to supply valuable general memoirs on Coleoptera; and the editor announces the approaching publication in its pages of a general catalogue of the species of this order.

Gabriel Koch has published, at Leipzig, an essay on the geographical distribution of Lepidoptera, under the title of "Die indo-australische Lepidopterenfauna in ihrem Zusammenhang mit der europäischen," in which he advances some new views in zoological geography as regards the Lepidoptera, from the consideration of which he proposes to divide the surface of the earth into three great regions. Of these, the European includes the whole of Northern Asia, and America north of 60° N. lat.; the American is formed by the remainder of the western continent; and the Indian, or South-Asiatic, extends through Malasia and Polynesia to Australia. This division is illustrated by the author with considerable detail. His chief difficulty appears to be with the African continent, which, although allied to that of Europe (with which he joins it), especially in the natural productions of its northern part, certainly exhibits strong Indian proclivities in its Lepidoptera, as well as in some other groups of animals. These regions may, in some measure, be confirmed by

the general distribution of the vegetable kingdom, with the addition, however, of a perfectly distinct centre for the characteristic Australian flora, and perhaps also for that of South Africa.

Leuckart's work on the Parasites of Man has now reached the second part of vol. ii. Dr. A. Schneider has published a monograph of Nematodes, exhibiting, in a striking manner, a combination of accurate research and felicitous generalization. Semper's beautiful work on Holothuria, forming the first three parts of the scientific results of his travels in the Philippine Islands (Reisen in dem Archipel der Philippinen, wissenschaftliche Resultate), although professing only to give the details of his own observations, is, in reality, an almost exhaustive monograph of the group. The histology of the Cœlenterata has been treated by Kölliker in his 'Icones histologicæ;' and Oscar Schmidt has published a second supplement to his 'Sponges of the Adriatic,' containing a discussion of Bowerbank's genera, and also a part of his great work on Infusoria.

The Zoology of the voyage of the 'Novara,' consisting neither of monographs nor of faunas, nor yet of any exhaustive treatise upon any one zoological subject, is simply a repertory of detailed descriptions, and, however useful these may be as additions to our stores of species known, need scarcely have been mentioned here, but for the beauty of the illustrations with which some of the parts are accompanied. The parts recently published are:—Fish, by Kner; Reptilia and Amphibia, by Steindachner; Mollusca, by v. Frauenfeld; Lepidoptera (parts 2 and 3 completing the Butterflies), by Felder; Hemiptera and Neuroptera, by G. L. Mayr and F. Brauer; and Annelida, by Grube.

In Botany, Germany has supplied us with some general speculative essays which I have not as yet had time to go over. Such are:—Ernst Krause's Systematic Botany in relation to morphology, mentioned in the Bulletin de la Société Botanique de France for 1866; Nägeli's speculations on hybridism and on species, in the Proceedings of the Royal Academy of Munich; besides others by other writers in the Botanische Zeitung and other periodicals, many of them taking up more or less of Darwinian principles.

Hofmeister's Handbook of physiological Botany, mentioned in my address of 1866, is, contrary to expectation, not yet completed, and the detached papers on various points of vegetable physiology are far too numerous to be here particularized; I would, however, call your attention in a few words to Hildebrand's 'Geschlechtervertheilung bei den Pflanzen,' or distribution of sexes in plants. This

is a methodical summary of recent observations (his own and others') on the mutual relations of the sexual elements in plants, and more especially the means by which the cross fertilization of separate individuals by insect agency, or otherwise, is effected, preceded by a short sketch of the history of the subject. Christian Conrad Sprengel, towards the close of the last century, in a remarkable work, long forgotten, but now recalled to our notice by Darwin, Hildebrand, Delpino, and others ('Das entdeckte Geheimniss der Natur, &c.', "The disclosed secret of Nature in the structure and fertilization of flowers"), first announced, as a fact, that the majority of flowers which secrete honey are incapable of self-fertilization, but are cross-fertilized by means of insects which visit them in search of that honey, illustrating this proposition by more or less detailed observations on between four and five hundred plants. Similar observations, on the evident impossibility in so many flowers of the stigma being acted upon by the pollen of the accompanying stamens, appear to have been brought forward by Henschel in 1820, in the attempt at refutation of the established doctrine of sexuality in plants; but all these observations were generally disbelieved or ridiculed, for as yet no plausible hypothesis had been brought forward connecting the facts observed with the general economy of reproduction. But when Darwin had once pointed out, in his 'Origin of Species,' the true tendency of these curious provisions, and graphically delineated some of the more complicated ones in his 'Fertilization of Orchids,' naturalists in various parts of the world set to repeating his experiments, and many detached papers on the subject have been published by Hildebrand himself as well as by others. The present memoir, in which the facts thus elicited are collected and systematized, affords a fair starting-point for future inquiries on the same subject under different conditions and in different climates.

Very few botanical monographs of any importance have been recently published in Germany. Hanstein has completed his review of Gesneraceæ in the 'Linnæa'; F. W. Klatt has illustrated the genus *Lysimachia*, with detailed descriptions and several plates, in the Transactions of the Natural-History Society at Hamburg, and completed his revision of Irideæ in the 'Linnæa'; and Batka has given a very elaborate monograph of the few species constituting the *Senna* group of the genus *Cassia*. Wimmer has published a monograph of European Willows; and Milde has completed, in the Nova Acta Academiæ Naturæ Curiosorum, his very full and copiously illustrated monograph of *Equisetum*.

Martius's great work on the Brazilian flora, already mentioned in my previous Addresses (which amounts almost to a series of monographs by various authors), is progressing slowly; the portions published since those I mentioned in 1866 have been:—Meissner's Lauraceæ, supplemented by an essay on the geographical distribution of the order in the Transactions of the Royal Munich Academy; Dr. Hooker's Rosaceæ; and Eichler's Combretaceæ.

Dr. Schweinfurth, of Berlin, has at length published the first part of his 'Contributions to the Flora of Æthiopia,' which had, I believe, been long in print, and supplemented it by a monograph of Æthiopian Gum-Acacias in the 'Linnæa.' Prof. Alexander Braun has given, in the Proceedings of the Academy of Berlin, a very detailed monograph of African Characeæ. From Vienna we have had a splendidly illustrated volume, descriptive of the principal botanical results of the spirited, but unfortunate, expedition of the ladies Tinné to Bahr-Ghasal, and another by Wawra, equally creditable to Austrian art, descriptive of plants collected in the earlier voyage to South America of the late Archduke Maximilian, who afterwards met with so deplorable a fate as Emperor of Mexico. Grisebach, who had previously published detached papers on Wright's Cuban collections, has now given a complete enumeration of all the plants known to him, or published as inhabitants of that island; he has also inserted, in the second volume of 'Das geographische Jahrbuch,' a comprehensive review of the progress of Geographical Botany during the years 1866 and 1867, L. K. Schmarda giving in the same work a similar report on the progress of Geographical Zoology.

Amongst a considerable number of smaller works and detached papers of mere local botanical interest, I may mention Schur's 'Enumeratio Plantarum Transsylvaniæ' as relating to a part of Europe less known to botanists than Germany proper. Reichenbach's great 'Iconography of the German Flora' has been steadily progressing, and is now approaching completion.

The Cryptogamic studies of the Germans have been as numerous as those on physiology; but I need only here mention Krempelhuber's 'Geschichte und Litteratur der Lichenologie,' or 'History and Literature of Lichenology,' forming a comprehensive guide, very useful to those who devote themselves to the study of Lichens; and Mr. Currey has called my attention to some remarks of De Bary's in the 'Botanische Zeitung,' on Bornet and Thuret's observations, mentioned below.

Two elaborate works on the injuries inflicted on trees, chiefly by

insects and cryptogams, have appeared:—Ratzeburg's 'Waldverderbniss,' of which one part is still wanting to complete the second volume, and Willkomm's 'Microscopical Enemies of the Forest.' I may also mention Ettinghausen's publications, illustrating by nature-printing the arborescent and shrubby vegetation of Austria, as specially useful to the student of palæontological botany.

Switzerland.

Geneva continues to be the seat of considerable botanical activity. J. Mueller of Argau's monograph of Euphorbiaceæ, forming the second part of the fifteenth volume of De Candolle's 'Prodromus,' fully justifies the anticipations we had formed as to the scientific merits of the work. Some defects in form have been pointed out by various critics. The want of an index of species will, no doubt, be supplied by a continuation of Buek's Indexes to previous volumes. One much more to be regretted is that innovation in nomenclature by which the author ascribes to himself every species of which he has modified the circumscription. The distinguished editor disclaims all responsibility, for he has given up the attempt to require uniformity in the monographs collected in this great work. The comments, however, which have been made upon the subject have probably been the cause of his taking up the whole question of the laws of nomenclature as recognized by botanists. The great want of some definite rule which naturalists would all be governed by had been felt by many zoologists, and Sir William Jardine several years ago laid the subject before the British Association. Committees were formed, and botanists invited to join. When, however, the code of laws came to be definitely discussed at the Birmingham meeting in 1866, the botanists withdrew; for the practice amongst us had been much more settled than it appeared to have been amongst zoologists, and we felt that laws laid down long since by such men as Linnæus, De Candolle, and the Jussieus, founded on what appeared to them the best suited to the objects in view, and sanctioned by custom, carried much greater weight than the decisions of any majority of a fortuitous assemblage of gentlemen, some, no doubt, of great experience, but others quite ignorant of the practical working of any disputed regulation. I have not heard how far zoologists have generally considered their code sufficiently settled to ensure obedience. Amongst botanists there have appeared of late, unfortunately, symptoms of opposition to established custom,

especially with regard to that personal rather than scientific question, Whose name or whose initial letters should, in the binomial nomenclature, be added to the double name of a species (generic and specific) to distinguish it from others which may have received the same name from other quarters? M. A. De Candolle having raised a discussion on this and some other points, he was requested to bring the whole subject before the meeting of the Botanical Congress at Paris last summer. He accordingly reduced the most generally acknowledged regulations to the form of a body of laws, which was laid before the Congress, modified, but perhaps not improved, in some small details in the discussion which ensued, and finally put to the vote, and adopted, as I believe, unanimously by the gentlemen present. These 'Laws of botanical nomenclature' have since been published in French and in English, and form an excellent guide, which it is sincerely to be wished that systematic botanists would conform to. In submitting to it, our reliance would be rather on the great knowledge of the subject, the experience and judgment of M. De Candolle, than on the fiat of a body of men, which those who were not present do not seem generally disposed to acknowledge. Two, indeed, of those who were actually present and joined in the vote, M. Desmoulins of Bordeaux, and M. Crépin of Ghent, have published long protests against the interpretation given in De Candolle's commentary to the clause which regulates the above-mentioned disputed point, averring that, when they voted, they understood it in a diametrically opposite sense.

Of Boissier's 'Flora Orientalis,' the first volume, containing the orders which in the Candollean arrangement precede Leguminosæ, has been published, and will be duly appreciated by all botanists as the first complete and methodical account of all that is known of the vegetation of that most interesting region vaguely designated as the Levant or the East, the cradle of civilization, and the probable scene of some of the earliest attempts at cultivation. To those who are searching into the origin of our cultivated species, or who are attempting the identification of the plants mentioned in the biblical and other early records, the accurate description of those now to be found in the country is of the greatest importance; and it is sincerely to be wished that M. Boissier's work may be vigorously prosecuted and brought to an early conclusion.

M. Casimir De Candolle, from his study of Piperaceæ for the 'Prodromus,' has been led into various inquiries as to the arrangement and formation of the organs of vegetation. His earlier paper

on phyllotaxis has now been followed up by some interesting observations and studies on the organogenesis and homology of the leaf, of which I have just received a separate reprint from the Bibliothèque Universelle, under the title of 'Théorie de la Feuille.' He considers the leaf as a branch of which the development has been arrested, comparing it also with the cup (or hypanthium of the Germans) in the Rosaceous flower, and details his evidences, derived chiefly from the examination of the position and direction of the vascular tissue, with considerable ingenuity. Whether his conclusions are or are not to be adopted is a question requiring more study than I have as yet been able to bestow upon it, before expressing any opinion.

From Grisebach's review of the progress of Geographical Botany I learn that Dr. Christ has published a valuable essay on the distribution of the plants of the Alpine regions of the European chain of Alps—a work which I have not met with myself, but in which it appears that he claims for the mountain-chains of the mainland of Europe and Asia the site of the centre of that flora which has received the name of the Scandinavian peninsula.

Italy.

I have no memoranda on any special zoological works published in Italy within the last two years. F. de Filippi has transmitted to the Academy of Sciences of Turin a series of observations on Marine Animals made during a voyage to Gibraltar, Rio Janeiro, Batavia, Cochin China, Japan, and China; and Signor Doria's expedition to Borneo appears to have been very successful in its zoological as well as its botanical results. Signor Beccari, who accompanied him, has spent above two years in thoroughly exploring the territory of the Rajah of Sarawak. He is now on his way home, or has already returned to Florence, whither his friend Doria had preceded him, and where we hear the whole of their very rich zoological and botanical collections have safely arrived. They purpose immediately to prepare them for publication, probably in a separate work on the flora and fauna of Sarawak.

In Botany nothing has been done yet towards completing the Flora of the Peninsula worked out according to natural orders, so elaborately commenced by Parlatore. The venerable Bertoloni, now above ninety years of age, has issued a second part or volume of the Cryptogamic portion of his 'Flora Italica,' containing the Algæ, which, however, I have not myself seen. Caruel, who com-

pleted in 1860 an excellent enumeration of Tuscan plants, has unfortunately been disappointed in his candidateship for more than one botanical post, which would have afforded him the desired opportunities of prosecuting his favourite studies. He has, however, published several short papers on European Cyperaceæ, and on various phytological questions which he has investigated.

F. Delpino has published at Florence an Essay on the Fertilizing-apparatus in Phænogamous Plants, which Hildebrand has reproduced in the 'Botanische Zeitung,' with notes and additions, and of which we have also a summary in Mr. Murray's 'Journal of Travel and Natural History.' Delpino in this essay details his observations on dichogamy and cross fertilization of insects, in confirmation of those of Sprengel, Darwin, and Hildebrand, in the case of various plants belonging to about twenty natural orders. Another pamphlet of his, 'Thoughts on Vegetable Biology,' is purely speculative, without, as far as I can discover, a single corroborative observation. He is a great admirer of Darwin's views of affinity depending on descent, but wholly discards Natural Selection, substituting for it, in plants, "a plasmatic principle, endowed with intelligence," by means of which he supposes that the plant itself modifies the forms of its flowers so as to secure the necessary agency of insects in fertilizing them. Pasquale, who has succeeded the late Dr. Gasparrini in the professorship and direction of the Botanic Garden at Naples, has published a Memoir on Heterophyllism, and a few papers in the Proceedings of the Neapolitan Academy. Detached accounts of Italian and Sicilian plants, chiefly cryptogamic, have also appeared in various Proceedings and Journals.

Spain.

In Spain the effects of a slight spur which had been given to the study of Natural Science about the time when I visited Madrid in 1859 appears to have died away. I can find no announcement of any biological publication, except an Enumeration or List of Spanish Cryptogams by Colmeiro. I hear that Lange and Wilkomm's Synopsis of the Spanish Flora is now likely to be continued; but to that the Spaniards themselves have not contributed. A very interesting fact in the distribution of plants, that of a *Dioscorea* inhabiting the Spanish Pyrenees, has also now been verified, and the plant figured and described—again not by a Spaniard, but by Grenier, in the 'Bulletin de la Société Botanique de France.' I observe, in

Agassiz's 'Journey to Brazil,' that he met, on the Amazons, with a Spanish scientific expedition on their return home; but I have seen no notice of it or of its results in any other place.

France.

Professor Milne-Edwards's Report on the Recent Progress of Zoology in France furnishes an interesting *résumé* of the numerous discoveries made of late years, and may be read with great profit, notwithstanding a not unnatural tendency rather to underrate the labours of zoologists belonging to other nations than the French. No one can deny, however, the very prominent position which that nation has always taken, and still continues to take, in the pursuit of Biology; and it is with very great satisfaction that we find that the splendid series of Memoirs issued from the Muséum d'Histoire Naturelle has been resumed under the title of 'Nouvelles Archives.' In this publication, as in other periodical issues by French scientific bodies, the very inconvenient habit of antedating (dating the several parts from the time they ought to have been, instead of that when they actually were published) renders it exceedingly difficult sometimes to ascertain the real year or month when particular observations or discoveries ought to take their place in the chronological records of science. The Memoirs now mentioned are those which, as we presume, have been really issued since the commencement of 1866. The most important zoological ones in the 'Nouvelles Archives' are MM. Gratiolet and Alix's "Recherches sur l'Anatomie du *Troglodytes Aubryi*," M. P. Fischer's paper on the genus *Ziphius*, and M. Alphonse Milne-Edwards's description of a small Rodent under the name of *Lophiomys Imhausii*, which he regards as the type of a new family in its order. It appears to be most nearly allied to the Muridæ, but shows relations to the Porcupines. M. Milne-Edwards has described the anatomy of this animal at considerable length, and illustrated it upon several plates. Unfortunately the native country of the creature, which was purchased at Aden, is unknown. M. Aug. Duméril's Prodromus of a monograph of Sturgeons is also in the 'Nouvelles Archives.'

M. Pouchet has published two parts of an elaborate work on the Great Ant-eater. M. Gratiolet has given us a Memoir on the anatomy of the Hippopotamus, and M. Alphonse Milne-Edwards, in the Annales des Sciences Naturelles, anatomical observations on some Mammifera of Madagascar and of China. The same zoologist, as

well as Messrs. Gervais and Coquerel, have detailed the skeletal characters of the Dodo.

Prof. Lacordaire, in the seventh volume of his 'Genera des Coléoptères,' has concluded his classification of Curculionidæ, together with that of the two or three smaller families which, with the true Weevils, constitute the great division of the Rhynchophorous Beetles. That there is much difference of opinion among entomologists as to the value of the principles upon which Lacordaire has founded his main divisions of Curculionidæ cannot be denied; but whatever views may be entertained upon this point, there is no doubt that he has made a great step towards the reduction of an excessively difficult and hitherto almost chaotic group into something like order. The Abbé de Marseul's periodical 'L'Abeille,' which has been regularly continued, seems at present to be entirely devoted to European Coleoptera, several groups of which have been treated monographically in its pages.

M. Quatrefages's great work in the Suites à Buffon, the 'Histoire Naturelle des Annelés marins et d'eau douce,' notwithstanding some grave defects (which have been indicated by M. Claparède of Geneva), must be regarded as making an epoch in the study of Annelides. To all future investigators of these interesting creatures it will be indispensable; and the wonder is, considering the difficulty of the subject, not that the author should have fallen into some errors, but that he has succeeded so well in bringing together the elements of our knowledge of so intricate a group. M. Quatrefages includes the Gryphea (Sipunculidæ, &c.) in the scheme of his work, but excludes the Turbellaria.

Amongst the most recent French botanical publications the first place must be given to Le Maout and Decaisne's 'Traité générale de Botanique descriptive et analytique,' in large quarto, of which every page is copiously illustrated with most instructive woodcuts. The first part is a general elementary treatise of morphological and structural botany; and the second and principal part an exposition of the natural orders—not entering into quite so much detail as is done in Lindley's 'Vegetable Kingdom,' but yet in some measure superseding that great work, of which the last edition is now fifteen years old, and which, after the loss of its lamented author, would scarcely admit of a new edition without remodelling so as to make it no longer Lindley's own. MM. Le Maout and Decaisne appear to have verified much by their own observations; and although two or three minor points have been indicated

where, in this as in all general treatises, some recent corrections of old views may have been overlooked, yet the whole work, as far as I have gone into it, appears to me to be admirably done, and to form a most useful guide for all practical followers of systematic botany.

From French systematic botanists we have otherwise had but very little during the last two years, and that little is chiefly of local interest. I believe that some important monographs are in preparation, but have not yet appeared. MM. Brongniart and De Gris proceed but very slowly, and only in a few detailed descriptions, in making known to us the results of the active exertions of their collectors in New Caledonia. We should, indeed, have been almost ignorant of the rich materials afforded by that colony for the elucidation of the affinities and geographical relations of the eastern section of the general Australasian flora, but for the spirited liberality with which M. Lenormand of Caen has transmitted to Kew sets of the plants received from his New-Caledonian friends. M. Baillon and his friends continue the 'Adansonia' mentioned in my former Address, M. Baillon's own contributions containing many excellent observations, accompanied, however, by views in which few botanists will probably concur, and occasionally attended by symptoms of hasty rivalry much to be regretted. With regard to French Floras, Ardoino has published one, of the newly annexed Department of the Alpes Maritimes; and Mr. Munby has given us a revised and complete enumeration of Algerine plants. The numerous detached papers on French plants have chiefly related to local forms and so-called critical plants, and need no further mention on the present occasion. I cannot, however, forbear the expression of a regret that MM. Jordan and Fourreau should have wasted so much talent and expense on their splendidly illustrated work entitled 'Icones ad floram Europæ novo fundamento instaurandam spectantes,' devoted as it is to the elucidation of the most trifling varieties of well-known plants.

The 'Annales des Sciences Naturelles,' the 'Comptes Rendus,' the 'Bulletin de la Société Botanique,' and the Transactions of provincial Societies contain numerous useful papers on various points of vegetable physiology. M. Naudin continues his researches on Cucurbitaceæ; and M. Godron has published some new experiments on hybridity. M. Trécul has added several new papers to his observations on the laticiferous and other vessels, M. E. A. Carrière on the production and fixation of varieties, M. Chatin on tendrils and on anthers, M. Planchon on dimorphism in the flowers

of the cultivated vine, M. Prillieux on the vegetation of Orchids, M. Blondeau and M. Paul Bert on the motion of sensitive plants, besides many others of real interest, although on small matters—not to mention new classifications and speculations either quite unmeaning or, like M. Ch. Fermond's six Phytogens the developments of which are supposed to form the basis of the structure of Dicotyledons, about as fanciful as Haeckel's fundamental forms.

In Cryptogamy Mr. Currey has kindly supplied me with the following note on MM. Bornet and Thuret's interesting researches on the impregnation of Florideæ, in the 'Annales des Sciences Naturelles.' The different parts which conjointly form the cystocarp constitute the female organ in the Florideæ; their number and arrangement vary much in different tribes, but amidst all the varieties of form and structure one character at least seems constant: this is the presence of a little appendage of a peculiar nature, to which the authors have given the name of *trichogyne*, because it always assumes the form of a more or less elongated hair, and is the essential organ of impregnation. This operation is effected by the copulation of the corpuscles produced by the antheridia with this trichogyne; and the result is the development of the capsular fruit or cystocarp. The process is traced by the authors in several tribes; but the details are complicated, and would not be intelligible without the figures. The general result, however, is that three principal modifications may be distinguished: impregnation is almost direct in the Nemalieæ, where the cystocarp grows from the very base of the trichogyne; in the other tribes the cells destined to form the spores are distinct from those which support the trichogyne, and are only impregnated indirectly; in *Dudresnaya* the impregnating apparatus is quite detached from the fructificatory one, and a kind of double impregnation takes place, the details of which are extremely curious. Some remarks on these observations, modifying in some respects the views of MM. Bornet and Thuret, are given by De Bary in the 'Botanische Zeitung.'

The following is Mr. Currey's analysis of a paper of Mr. E. Roze, which has also appeared in a recent number of the 'Annales des Sciences Naturelles,' and is evidently a translation from the German; but I have been unable to ascertain whether it has or has not been published in the original. The author's observations led him to the conclusion that if the prolongation of the pollen-tube in phænogams has no other result than that of conveying the fecundating matter to the embryo-sac, the antherozoid in cryptogams ought for its part

to have only the same function to fulfil with regard to the archegonium—that if the contents of the pollen-tube may be properly taken to represent the male element, the equivalent of this male element should be recognizable separately in the antherozoid—and that in fact the antherozoid is composed of two distinct portions, the motile apparatus and the impregnating element. The author's conclusion is that the active antherozoid is in reality only a conducting agent (agent de transport) for bringing about the junction of the two sexual elements.

Dr. Nylander continues his lichenological studies, and has recently published general enumerations of the lichens of New Caledonia and of those of New Granada, the latter as a portion of Triana's 'Prodromus Floræ Novogranatensis.'

The fierce party conflict, of which France was the chief arena, on the question of spontaneous generation, mentioned in my Address of 1863, has been since carried on, although it seems in some measure to have calmed down for want of new facts to argue upon, each party, at least some individuals of each party, professing to have silenced the other. The chief question of fact in dispute seems to be the following:—If an organic substance in dissolution be exposed in an hermetically closed vessel to a heat sufficient to destroy all living organisms or germs it may contain, will living Vibrios appear in it without the admission of the external air supposed to contain their germs? And numerous are the experiments, apparently conducted with the greatest care, which have been brought forward as proving the affirmative or the negative. This was already the state of the case five years ago, and remains so still; and I should not again have mentioned the subject but that some curious facts, bearing upon the question and narrowing in some measure the disputable ground, have been brought forward by some ingenious and evidently careful experiments made by Professor Wyman, of Harvard College, Cambridge, U.S., leading him to the following, amongst other conclusions:—

1. In thermal waters, plants belonging to the lower kinds of Algæ live in water the temperature of which in some instances rises as high as 208° Fahr.

2. Solutions of organic matter *boiled for twenty-five minutes*, and exposed only to air which had passed through iron tubes heated to redness, become the seat of infusorial life.

3. Similar solutions contained in flasks hermetically sealed and then immersed in boiling-water for periods varying from a few

minutes to four hours, also became the seat of infusorial life (gradually more rare the longer the boiling was continued).

4. No infusoria of any kind appeared if the boiling was prolonged beyond a period of *five hours*.

5. Infusoria having the faculty of locomotion lost this when exposed in water to a temperature of from 120° to 134° Fahr.

Thus it would appear that although a heat considerably below that of boiling water will destroy the life of individual infusoria, yet the germs of Vibrios, Bacteriums, and Monads (or, as spontaneous-generationists might say, the faculty possessed by the atoms of organic substances of being converted into living Vibrios) will resist during a longer or shorter period the action of boiling water, but that a limit can be reached, beyond which their destruction is inevitable and no Vibrios are generated or created.

Southern Hemisphere.

I have on former occasions alluded to the impulse given to the study of Natural Science in Australia by the indefatigable exertions of the distinguished Government Botanist of Melbourne, Dr. Ferdinand Mueller, whose zeal continues undiminished. Obliged by the state of his health to give himself some temporary rest, he took the opportunity of paying a visit to King George's Sound to make himself personally acquainted with the only section of the Australian flora which he had not observed in the living wild state, and, during his short stay there, collected very largely. Among numerous minor labours he has carried his 'Fragmenta Phytographiæ Australis' far into the sixth volume, a valuable repertory of descriptions and observations, the practical usefulness of which, however, is much diminished by the total want of order and method. His Essay on Australian Vegetation, indigenous or introduced, on the occasion of the Intercolonial Exhibition at Melbourne in 1866–67, is full of useful information on a subject which no one is better acquainted with than himself; and it is to be hoped that he may now devote himself to the preparation of the promised monograph of that genus *Eucalyptus* which forms so essential a part of the useful as well as the characteristic vegetation of Australia. Several of his friends, whom he has incited to the pursuit of Botany, have published papers on various subjects, especially Mr. Woolls, of Parramatta, who has collected his various Essays into a volume entitled 'Contributions to the Flora of Australia.'

In Zoology, I observe a considerable portion of the recent volume of the Transactions of the Royal Society of Victoria occupied by Australian Coleoptera described by Count F. de Castelnau.

Dr. Hooker's 'Handbook of the New-Zealand Flora' has been completed. The Industrial Exhibition in that Colony, in 1865, has been the occasion of several Essays, of which those of Mr. Buller, on the Ornithology, and of Dr. Colenso, on the Vegetation of New Zealand, belong to our Science; and from Dr. Lauder-Lindsay, besides several detached papers, chiefly on the Lichens of that Colony, we have a separate Essay, entitled 'Contributions to New-Zealand Botany.'

Messrs. Finsch and Hartlaub have given an account of the Birds of the Viti, Samoa, and Tonga Islands in their work entitled 'Ornithologie Central-Polynesiens;' and Dr. Seemann's beautifully illustrated Flora of the Viti or Fiji Islands has reached its seventh part.

Mr. E. L. Layard's 'Birds of South Africa,' a descriptive catalogue of all known species south of the 28th parallel, published at Cape Town, presents some defects which have been pointed out by various writers, but must be welcome to zoologists as a first attempt to bring together all the birds belonging to an interesting region. Mr. Roland Trimen has published an excellent volume on the Rhopalocerous Lepidoptera of South Africa, and has communicated to us a paper on Mimetic Analogies among the Lepidoptera of South Africa, which will appear in the usual winter part of our Transactions. Dr. Wallengren's paper on South-African Heterocerous Lepidoptera has been already mentioned. There are now in the Cape Colony several active resident botanists who are contributing much towards making us more perfectly acquainted with the extraordinarily varied vegetation of that country, among whom I would specially mention Mr. M'Owan, of Grahamstown, Mr. Bolus, of Graafreynet, Mr. and Mrs. Hutton, of Bedford, and Mr. Sanderson and Mr. M'Ken, of Natal; and although the great 'Flora Capensis,' undertaken by the late Dr. Harvey and Dr. Sonder, has as yet made no progress since the lamented death of the former, yet we hope that arrangements are being carried on for its completion; and in the meantime the new edition of Dr. Harvey's 'Genera of Cape Plants,' which was nearly complete at his decease, is about to appear under the able editorship of Dr. Hooker.

In South America, Dr. Burmeister has established a publishing society at Buenos Ayres; but his papers have been hitherto on Palæontological Mammalogy, which does not come within the scope of my review. Dr. Fritz Mueller, of Desterro, continues to send over in-

teresting papers; amongst others, he has sent a curious one describing a new species of *Balanus* (*B. armatus*), as well as a singular form which he regards as a hybrid between this and Darwin's *B. improvisus*, var. *assimilis*. I cannot, also, pass over in silence the active exertions of M. Correa da Mello, of Campinus in Brazil, whose admirably selected botanical specimens and observations, under the guidance of his friend and correspondent Mr. Hanbury, cannot fail to supply us with much knowledge of the vegetation of South Brazil which can only be given by a resident botanist.

United States of North America.

The progress of biological investigation in the United States, at least as far as Scientific Bodies have contributed to it, having been the subject of my last year's Address, I need say but very few words on the present occasion. I have, however, to express my regret at one accidental omission, that of the Essex Institute at Salem, whose Proceedings, now forming five 8vo volumes, are replete with zoological and botanical papers of general as well as of local interest. Amongst those contained in the most recent numbers, I observe the commencement of a Flora of the Hawaiian Islands by Mr. Horace Mann, which appears to be drawn up very nearly upon the plan sanctioned by the late Sir William Hooker for the series of our Colonial Floras. Such a Flora is now much wanted to enable us to form a fair judgment of the peculiar vegetation of that group, comprising so much that is absolutely endemic, but partaking also of that South-Pacific flora which extends to the shores of Australia. I should also now mention, as not having come within the scope of my last year's review, the completion of Mr. Eyton's great work on the Comparative Osteology of Birds; the commencement of Mr. Elliott's 'Birds of North America,' a magnificent series of large folio plates, intended as a sort of supplement and companion to the great work of Audubon, and Professor Louis Agassiz's ichthyological and geological expedition to Brazil. In this journey, which appears to have been well planned and eminently successful, he was accompanied by a staff of six assistants (including a skilled draughtsman) whose expenses were defrayed by Mr. Nathaniel Thayer, by six volunteer assistants, by a doctor and his wife, and, last but not least, by his own wife, Mrs. Agassiz, to whose pen we are indebted for a most interesting as well as instructive narrative of the expedition. The scientific results have not yet been published, but I shall presently

have occasion to allude to such mention of them as I find in these pages.

Britain.

The unparalleled success of our Zoological Society under the active and able management of their present Secretary, the efficient and, I trust, ever-increasing support that our own Society has met with of late years, the Societies established for the promotion of Entomology and other branches of our Science, and the number of Scientific and other Institutions in Edinburgh and Dublin, as well as in various provincial towns which more or less cultivate or encourage Natural Science, have given an impulse to its study which leaves us by no means behind any continental state in the number and importance of our biological publications, nor yet in the excellence of some of our illustrations, although in other cases, owing in a great measure to the high remuneration necessary to secure anything like high art, we may miss that neatness of execution which gives to some of the German and French biological plates such clearness and precision of detail in a small compass. I trust, however, that we are now giving up those exaggerated analyses upon too gigantic a scale to be readily caught by the eye, which were prevalent some ten or twenty years back, without recurring to the small uninstructive ones of former days; and some of the most recent zoological illustrations may really be cited as models of art.

It would be useless on the present occasion to do more than mention by name the principal works and papers on systematic and structural Zoology which have appeared in this country within the last two years. Such are:—Mr. W. K. Parker's Treatise on the Shoulder-girdle and Sternum in the Vertebrata, and his Memoir in the Philosophical Transactions on the Structure and Development of the Skull in the Ostrich Tribe; Mr. St. G. Mivart's paper in our Transactions on the Anatomy of *Echidna Hystrix*; Professor Owen's Memoir on the Skeletal Characters of the Dodo; Professor Huxley's New System of Classification of Birds, proposed in the Proceedings of the Zoological Society; Dr. J. E. Gray's Synopses of various Families, in the same Proceedings, and in the Annals of Natural History, especially Bats, Squirrels, and Eared Seals; the sixth and seventh volumes of Dr. Günther's Catalogue of Fishes, bringing the classification down to the end of the order Physostomi, and the splendid work which the same distinguished ichthyologist has brought out, in conjunction with Col. Playfair, under the auspices of the Bombay

Government, on the Fishes of Zanzibar; the Monograph Mr. J. C. Cox has commenced of the Land-shells of Australia; Mr. Gwyn Jeffreys's British Conchology, of which four volumes have appeared; a continuation, at somewhat irregular intervals, of Messrs. Spence Bate and Westwood's British Sessile-eyed Crustacea; Mr. G. S. Brady's paper on Marine Ostracoda, now printing for our Transactions; Miss Stanley's little Popular History of British Spiders; Sir John Lubbock's papers on *Thysanura*, on *Chloëon*, and on *Pauropus* in our Transactions; Dr. Baird's papers on animals of the lower orders in our Journal; and very numerous entomological papers, which I leave more especially to the Entomological Society to review and discuss.

Mr. Gould's great illustrated work on the Birds of Asia has reached its 20th part; twelve parts are now published of his 'Birds of Great Britain;' and a fourth supplemental part of his 'Birds of Australia' has very recently appeared. Messrs. Sclater and Salvin have commenced, under the title of 'Exotic Ornithology,' an important work intended as a sort of continuation of the 'Planches Coloriées' and of the 'Iconographie Ornithologique' of Temminck, comprising detailed descriptions and figures of new or imperfectly known exotic birds, accompanied by synopses of species of the genera to which they respectively belong. The five parts published relate exclusively to Tropical American Birds. Of the late Mr. Reeve's 'Conchologia Iconica,' fifteen parts have appeared since the beginning of 1866; Mr. Hewitson continues his beautifully illustrated works on Exotic Butterflies; Mr. Stainton has completed the first series of ten volumes of his 'Natural History of Tineina.'

I copy from Mr. Dallas's notes the following observations, as I have not had time myself to look into either of the works mentioned:—"Mr. Wollaston has followed up his valuable investigations of the Coleoptera of the Madeira and Canary islands with an examination of those of the Cape Verde Islands, the result of which he has published under the title of 'Coleoptera Hesperidum.' From this work we find that the coleopterous fauna of these distant islands presents a most marked resemblance to that of the more northern groups, which had previously engaged Mr. Wollaston's attention. Notwithstanding their much more southern position, there is but little to indicate a more tropical or African character about them; so that, at least as far as Coleoptera are concerned, Mr. Wollaston thinks that all these Atlantic islands may be regarded as belonging to a single fauna. In the Cape Verdes, again, as in the Canaries and

Madeira, we find a multitude of forms described as species, but differing from each other, or from known species living in other localities, by such minute characters that, but for their permanence and geographical localization, they would be regarded as mere varieties. For these forms Mr. Wollaston seems inclined to adopt a sort of semi-Darwinism; that is to say, he admits that they may have been produced by modification consequent on the breaking-up of the district into islands; but at the same time implies that, could this be demonstrated, we should have to suppress the species."

"The second volume of Dr. Bowerbank's 'Monograph of British Spongiadæ' appeared in 1866. This work has called forth a host of comments, in which the views of the author upon physiological and classificational questions have been rather roughly handled. We may call particular attention to a valuable paper by Prof. James-Clark, read to the Boston Society of Natural History, and reprinted in the 'Annals of Natural History,' on the relationship of the ciliated sponges to the Flagellate Infusoria, which bids fair to throw some light upon the intricate affinities of the Protozoa. Professor Oscar Schmidt, in a second supplement to his 'Sponges of the Adriatic,' has also entered into a discussion of Dr. Bowerbank's genera."

Mr. Murray's elaborate work on the Geographical Distribution of Mammals, the greater part of it devoted to the discussion of the distribution of the subordinate groups of the Mammalia, is carried out into considerable detail, and furnishes an excellent guide to this important subject. The numerous maps with which it is illustrated, upon the plan of those adopted in the Kew Museum in respect of economical plants, are excellent, as exhibiting at one view, for purposes of comparison, the general areas over which the several groups extend. Upon looking over them, without having studied the text, I have been struck with the little correspondence shown in their areas with what is known of the geographical distribution of large and widespread genera of plants. The preliminary inquiries show a high appreciation of, though not, in all respects, a concurrence with, the views of Mr. Darwin. Mr. Murray, like many of us, has found reason to alter, in some respects, his former views as to the stability of species; he now admits their derivative origin and occasional modification; what he still contends for appears to be that the changes are sudden and directly consequent upon absolute change of condition, and never gradual and continuous, nor dependent on selection in the struggle for life. He refers to views expressed in some of Sir Charles

Lyell's former works, which have, I believe, since been modified, and quotes also an expression of my own, that "Every species has certain determinate limits of variation, which it only exceeds under exceptional circumstances; and the exceptionally abnormal forms thus produced are few in individuals, and are not reproduced." This was penned before the publication of the 'Origin of Species.' Had I now to repeat the formula, I should omit all absolute expressions, and admit of the occasional permanence of their transgression, when the changes are not checked by cross breeding and other causes detailed in Darwin's more recent work. I have also little doubt that a careful study of this book must have on Mr. Murray's mind some of the effect it has had upon mine; and even at present his hypothesis as to the cause of restricted areas (p. 10) appears to me not to differ essentially from natural selection in the struggle for life.

I take this opportunity of adverting to the 'Journal of Travel and Natural History' lately commenced by Mr. Murray, which promises to supply a deficiency much felt in the science. The three numbers already out afford a promise that it will be found well to repay any encouragement given to it on the part of naturalists.

In Systematic Botany, Dr. Hooker and myself have completed the first volume of our 'Genera Plantarum.' Colonel (now General) Munro has inserted in our Transactions a most valuable monograph of that very difficult but important group of grasses, the Bambusaceæ. Their gigantic size, the rarity with which many of them flower, are the chief causes of the very unsatisfactory state of our herbarium specimens; but, besides a close study of Gramineæ during many years, General Munro has been able to observe many of them living in the various countries to which his military duties had called him, and thus very materially to advance our knowledge of them. Our Journal contains also a continuation of Dr. Masters's excellent monograph of Restiaceæ, an order the study of which is much complicated by the great dissimilarity frequently observable between the individuals of the two sexes. In some, indeed, of the best general systematic works, he found the males and the females of the same species placed in different genera. The 'Synopsis Filicum,' which had been brought by the late Sir William Hooker into a very advanced state, has now been published under the editorship of Mr. J. B. Baker—who has supplemented it by a paper on the geographical distribution of Ferns, in our Transactions.

Dr. Hooker has undertaken the continuation of his late father's 'Icones Plantarum,' the second part of the new series being on the

eve of publication; the plants figured are selected from those of the Kew Herbarium which appeared the best for illustrating new or interesting generic or sectional forms, or comparatively little-known floras. Mr. Wilson Saunders has commenced a somewhat similar, but partially coloured work, entitled 'Refugium Botanicum,' containing figures of the most curious species that flower in his rich and varied collection at Reigate. Mr. Hardwicke's new and methodically arranged edition of 'English Botany' has now nearly completed its eighth volume.

The plates for Dr. Welwitsch's "Sertum Angolense," to appear in our Transactions, are all engraved, and we are in great hopes of very soon being able to place the text in the printer's hands. In the meantime he has published in our Transactions, in conjunction with Mr. Currey, the Fungi collected in his Angola expedition; and his terrestrial and freshwater Mollusca have been published by M. A. Morelet at Paris, together with a general introductory sketch of his arduous and most successful journey.

I am obliged, with regard to Britain as to other countries, to pass over the numerous contributions to Botany which have appeared in the shape of detached papers in our Transactions and Journals, in the Transactions of the Botanical Society of Edinburgh, and of various provincial societies, in Seemann's Journal of Botany and the Annals of Natural History, besides local Floras, and other works of local botanical interest.

In general Biology a great advance has been made by the publication of the first portion of that wonderful series of observations, collection and verification of recorded facts, and methodical studies upon which Mr. Darwin has founded his theories on the modification of species through successive ages. In one of the first notices of this "Variation of Animals and Plants under Domestication," in a journal of literature and science of large circulation, I was not a little surprised to find the assertion that these volumes "contain nothing more in support of the hypothesis of origin by selection than a more detailed reasseveration of the guesses founded upon the so-called variations of pigeons." The most charitable interpretation to be put upon this sentence is, that the critic had reviewed the book from preconceived notions without reading it; and this sweeping condemnation might have been passed over in silence; but as the same journal, and possibly the same critic, asserts, in another number, that natural selection is rapidly declining in scientific favour, and as similar vague denunciations and sneers at Darwinism find

their way into public addresses and works in which science is diluted for popular use, even by Fellows of our society, I may perhaps be allowed a few observations on what appears to me to be the present state of the questions he has propounded, and how far their solution has been promoted by his present work.

It is nearly ten years since the first sketch of his now celebrated theory of Natural Selection was laid before this society, followed early in 1859 by the publication of his 'Origin of Species;' it is this day five years that, on the occasion of calling your attention to the reception which his views had met with from the scientific world, I observed that the tide of opinion among philosophical naturalists appeared to be fast setting in favour of the hypotheses he advanced. From such a review as I have been able to make of the current biological literature, it appears to me that the current has continued to flow in the same direction. There is scarcely a work or a paper on general biological subjects in which Darwinism is not more or less discussed, the name being adopted (at least in America and Germany) as no longer conveying a sneer. Eminent naturalists, who were still reluctant to abandon long-cherished theories, and hesitated to declare themselves openly, have now boldly adopted Darwinian views; from Sir Charles Lyell, who had formerly relied on the multiple fixity of species, we have, in the recent tenth edition of his 'Principles of Geology,' a most admirable summary of the theory of derivative origin and of its bearing on the geological history of the globe; profound thinkers, especially in Germany and in this country, have argued upon some of the principal points as established facts; essays have appeared in various parts of the Continent with a view to popularize more or less of the principles laid down; and even the constant repetition of vague party declamations against the system are evidences of the ever firmer hold it is taking upon the minds of the naturalists to whom, or at whom, these denunciations are addressed. The strongest opposition now kept up amongst observing naturalists is, perhaps, that of the party in France who still maintain the cause of spontaneous generation with all the bitterness of a social dispute. Of a very different character is Professor Agassiz's maintenance of the immutability of species; for although, on starting for the Brazilian expedition above alluded to, he avers that the conviction which drew him irresistibly into it was that the combination of animals on that continent, where the faunæ are so characteristic and so distinct from all others, would give him the means of showing that the transmutation theory was

wholly without foundation in facts, yet he indulges in no sweeping denunciations, but treats the question as the most important subject of investigation. One of the instructional lectures given on the voyage out to his young companions contains the following excellent passage:—"There is a change to be introduced into our mode of work as compared with that of former investigators. When less was known of animals and plants, the discovery of new species was the great object. This has been carried too far, and is now almost the lowest kind of scientific work. The discovery of a new species, as such, does not change a feature in the science of natural history any more than the discovery of a new asteroid changes the character of the problems to be investigated by astronomers. It is merely adding to the enumeration of objects. We should look rather for the fundamental relations among animals; the number of species we may find is of importance only so far as they explain the distribution and limitation of different genera and families, their relations to each other and to the physical conditions in which they live. Out of such investigations there looms up a deeper question for scientific men, the solution of which is to be the most important result of their work in the coming generation. The origin of life is the great question of the day. How did the organic world come to be as it is? It must be our aim to throw some light on this subject by our present journey." How far the facts collected by the Professor in this journey answered his hopes of a triumphant refutation of Darwinism does not appear in the narrative. The principal general results mentioned as connected with biology are:—the evidences of a long-continued glacial period preceding the establishment of the present races of Brazilian animals and plants; the number of genera and species of fishes, so enormously exceeding all previous expectations; the extremely limited areas the majority of them occupy, without the appearance of any physical conditions limiting those areas; the absence of genera belonging to temperate regions compensated by representative genera; the conviction that the physiological and other differences between the different races of men are as great as those which separate distinct species of animals; and a general conclusion that among plants as among animals, at least in some instances, there is a correspondence between the youngest stages of growth in the higher species of a given type and the earliest introduction of that type on earth.

In the meantime, observations bearing upon the life of species have been multiplied in many darts of the world. When Mr.

Darwin published his volume on the fertilization of Orchids, and his papers on dimorphic and trimorphic plants in our journal, a regret was expressed that he was delaying the completion of his great work by investigations not directly connected with it; but now that a portion of that great work has at length appeared, it becomes clear what important clues these phenomena afford to the solution of various obscure points in the history of races; and the great prevalence of dichogamy and dimorphism is now fully confirmed by numerous observers whom Darwin's works have called forth. These and other observations in confirmation of, or in apparent contradiction to his own, have been so well collected and discussed by Mr. Darwin himself that I need not further dwell upon them, but shall proceed in the attempt to point out shortly what the present work on the Variation of Animals and Plants under Domestication has effected towards the proof and advancement of the general question.

The first great fact to establish as the main foundation of the whole fabric was the extent of variability in animals and plants—that is, that the offspring are liable to differ from the parent in any and every character, even in those which are usually reckoned of generic importance, and the transmissibility of these variations to subsequent generations; and the greater part of the first volume is devoted to the exposition and discussion of the evidences in support of these propositions, going through the whole range of domesticated animals and plants. The summaries of these chapters, excellent as they are, give but a very inadequate idea of the richness of their contents. Duly to appreciate the authority and bearing of the numerous and varied facts here collected and methodized, every word must be read and every page must be studied; for Mr. Darwin never indulges in the empty verbiage so characteristic of certain French and Italian writers on general biology, nor yet in the dogmatism of the Germans. And this portion of his work being essentially a collection of evidences, he refrains from all figurative illustrations. The only metaphor, indeed, which I have observed in the two volumes is that of the selection by the architect of the fragments of the fallen rock suited to his purpose, in illustration of selection by man of variations applicable to uses for which they were not intentionally produced; and even this metaphor, appropriate as it may be, had better, perhaps, have been dispensed with; for the comparison of objects which are not *pari genere* is very liable to be carried out beyond the limits of strict analogy, and then to mislead rather than elucidate.

For the fullest details, pigeons, rabbits, horses, fowls, culinary plants, and fruits are selected, as affording at once the best evidence of community of origin and the most striking instances of diversity in form and structure in the domesticated races; but the chapters on dogs, pigs, cattle, ducks, and miscellaneous plants are equally instructive. In these same chapters the effects of selection by man, methodical or unconscious, are throughout kept in view and discussed in relation to every class of animals or plants treated of. Throughout it appears that the comparative amount of variation obtained under the care of man in the several organs has depended, not on any innate comparative variability of the organs, but on the objects sought to be attained.

The eleventh chapter is devoted to the very curious and comparatively novel subject of bud-variation, in relation to which very few facts have as yet been observed; but some of these, like that of the *Cytisus Adami*, have been so startling as to have been denied in part or *in toto*. Such as can be well authenticated are here subjected to a most interesting discussion. They seem to bear little upon the general question of origin by selection, but much more upon the hypothesis brought forward in the second volume, to which I shall presently allude.

In the second volume I was much struck with the admirable chapters on crossing (XV. to XIX.), as deserving of special study. A methodical review of the present state of our knowledge of a subject which has been so much advanced by experiments and observations provoked by Mr. Darwin's first work, is accompanied by the exposition of the various effects of the complicated phenomena of crossing and interbreeding in provoking variation or in maintaining the stability of species, in improving or deteriorating races, according to conditions more or less known to us.

Two chapters are devoted to a general review of methodical or unconscious selection by man as well as of natural selection on domesticated species, as deducible from the facts detailed in the first volume, accompanied by historical sketches of changes known to have been effected by these means.

The fact of variability being established, an investigation into the very obscure subject of the causes of variability, and the endeavour to trace out the laws of variation, necessarily followed. Few and vague as are the data from which we can judge of those causes, such as Mr. Darwin has been able to collect lead him to conclude that the variability of organic beings under domestication results from

the conditions to which the parents have been exposed, but that the amount and direction of variation by no means correspond with the amount and nature of the changed conditions, but is regulated by a variety of laws, of many of which very little is as yet known, but of which some of those which are best evidenced are here brought forward. The subject must necessarily be still further investigated when variability of organic beings in a state of nature comes to be considered in detail.

A much more difficult subject than any others treated of in these volumes is the proposed new hypothesis of Pangenesis; but as this question is of a somewhat speculative nature, I shall not presume to offer you more than a few words of notice on the present occasion. Certain facts in the history of organisms, in their reproduction, variability, inheritance, and reversion to long-lost characters, although well authenticated, appeared quite anomalous and inexplicable under the general laws of succession hitherto propounded. These facts Mr. Darwin has endeavoured to connect by the supposition that the cells or units composing the living body, besides the admitted propagation by self-division or prolification, throw off during all stages of development minute granules or atoms which he calls gemmules which circulate freely throughout the system, and when supplied with proper nutriment—when united with other partially developed cells or gemmules—become developed into cells like those from which they are derived,—that they are transmitted from the parent to the offspring, and are usually developed in the generation which immediately succeeds, but may be transmitted in a dormant state through many generations, and then developed. This hypothesis startles us at the outset, as entailing the supposition of an infinitesimal minuteness, number, and complexity beyond all powers of conception; and a first glance over the chapter seems to show but very few facts upon which to found what Mr. Darwin himself characterizes as a gratuitous assumption. But if, on a second reading, we take into consideration how familiar mathematical signs make us with numbers and combinations, the actual realization of which is beyond all human capacity, how inconceivably minute must be the atoms even of those emanations which most powerfully affect our sense of smell or our constitutions; and if, discarding all preventions, we follow Mr. Darwin, step by step, in applying his suppositions to the facts laid before us, we must, I think, admit with him that they may explain some, and are not incompatible with others; and it appears to me, from the very few critical observations I have as yet met with, that

they will be admitted by many as a provisional hypothesis, to be further tested, and to be discarded only when a more plausible one shall be brought forward.

In conclusion, I cannot but express my belief that it will be generally admitted that Mr. Darwin has in this work most satisfactorily laid before us the first important instalment of that great repertory of facts from which his celebrated theory has been deduced; and we can only look forward with the greater eagerness to the appearance of that second portion (the variation of animals and plants in a state of nature) the data of which are so numerous, and so varied in their authenticity as well as in their signification, as to require all Mr. Darwin's skill to test them, to methodize them, and to apply them so as to enable us correctly to judge of the strength of his conclusions. In the meantime, it is to be hoped that the spirit of observation which his works have already called forth will be carried out in the same direction by lovers of our science in all parts of the world. Naturalists residing in countries where no new forms are to be discovered, need not think that there is nothing for them to do towards the advancement of biological science; nor need they be reduced to cataloguing individual or fleeting varieties in the form of a leaf, or the hairs of its surface. Tracing out the history of a plant or an insect from the first development of the egg to the final extinction of its life, of the changes it undergoes in its internal organization, of the vicissitudes of its life from external causes, local, climatological, or social, of its relation to the surrounding organisms, of the degree in which it is prejudicially or beneficially affected by living beings of its own or of any other class, are now subjects of inquiry much more important than differences in external form. But in every biological undertaking, whether it be the monograph of a group or the Fauna or Flora of a country, the exposition of a physiological structure or of a phenomenon of life, the enunciation of a new theory or the refutation of an old one, the periodical surveys I have had to take of biological works have convinced me that there is one true course to pursue:—first, to observe for one's self once and again, and to test personally the observations of others; secondly, to collect, compare, and methodize all that has been published and authenticated upon the group, the district, the organ, the phenomenon, or the theory which is the subject of investigation; and, thirdly, and only after the first two processes have been exhaustively carried out, to reduce the observations to a general treatise, and speculate upon the conclusions to be drawn from them. And in this

course it appears to me that no better model can be chosen than Charles Darwin's 'Variation of Animals and Plants under Domestication.'

OBITUARY NOTICES.

The Secretary then read the following notices of deceased *Members*.

The Rev. Hamlet Clark, M.A., was born at Navenby, in Lincolnshire, on the 30th of March 1823, and died at Rhyl, in North Wales, on the 10th of last June. I have been favoured with the following brief notice of Mr. Clark from his friend the Rev. G. B. Blenkin, who says that "my remembrance of Hamlet Clark extends back to 1833, when we were schoolfellows at Beverley Grammar School. He was always a straightforward and truthful fellow, one for whom a good deal of boyish sympathy was felt; for at that time his health was not strong, a circumstance which often prevented his joining in the sports of his schoolfellows.

On leaving Beverley, he went to read with the Rev. Mr. Scott at Wappenham, where the love of insects appears to have been awakened in him by some of his fellow-pupils.

At Cambridge he soon became one of the most popular among the undergraduates. Tall and handsome, and with a free open countenance and frank and generous spirit, he soon won for himself a reputation in College, and exercised a considerable influence for good, more especially among the non-reading men.

He was a most diligent and laborious worker and reader on subjects of natural history, and especially entomology; and, had the same facilities existed at Cambridge then as now for acquiring that kind of knowledge, there can be no doubt he would have held a very high place in the opinion of the University, and obtained a very high degree in the Tripos. As it was, he was constantly reading books on the subject, and consorted with others like-minded with himself, such as Wollaston, of Jesus, and Babington, of St. John's, his rooms being piled up with cases for insects.

On Saturday mornings (the Cambridge market-day) he used to have a perfect bevy of callers from the country, bringing insects for purchase, or other strange creatures they may have

found; and, as they came early and he did not rise very soon, he often had occasion to receive his visitors in bed and there examine the contents of the boxes which they had brought, having a good laugh at some when they had brought anything worthless, and a hearty commendation for others who had got something good, and a friendly greeting with liberal payment for all.

Mr. Hamlet Clark became a Fellow of the Society on the 21st of June 1860, but never communicated anything to our Publications. He enjoyed an extensive reputation as an Entomologist, in which science his labours were, I believe, chiefly confined to the Arachnidæ and Dytiscidæ among the Coleoptera, upon which he has published numerous papers in the 'Annals and Magazine of Natural History,' Newman's 'Zoologist,' and the 'Transactions of the Entomological Society;' whilst in 1856 he published, in conjunction with Mr. J. F. Dawson, 'A Rearrangement of the Nomenclature and Synonymy of the Geodephaga, Hydradephaga, and part of the Philhydrida,' being the first portion of a General British Catalogue.

Shortly before his death he published a small octavo volume entitled 'Letters home from Spain, Algeria, and Brazil during past Entomological Rambles.' As these letters date as far back as 1856 and 1857, they cannot be said to contain anything new in the scientific way; but they are written in a pleasing and easy style, and not only indicate plainly the acute powers of observation of the lamented author, but also show the simplicity and amiability of his character.

Augustus Frederick Coope, M.D., formerly practised as a physician at Brighton, and had been a Fellow of the Society since 1835. He died at Norwood on the 15th of August 1867, aged 55. I regret that I have as yet been unable to procure any further information respecting him.

Charles Giles Bridle Daubeny, M.D., F.R.S., &c., some time Professor of Chemistry, and late Professor of Botany and of Rural Economy in the University of Oxford, died on the 12th of December last, aged 73.

He was born on the 11th of February 1795, at Stratton, in Gloucestershire, and was the third son of the Rev. James Daubeny. He entered Westminster School in 1808, and was elected to a Demyship in Magdalen College, Oxford, in 1810. In 1814, at the age of 19, he took the degree of B.A. in the second class,

according to the old style of the Oxford examinations. In 1815 he won the Chancellor's Prize for a Latin Essay on a subject in Moral Philosophy, the prize for the English Essay in the same year being gained by Arnold.

His subsequent studies, which were directed towards the medical profession, were pursued in London and Edinburgh. Whilst there, his earnest attention was attracted by the Lectures of Professor Jameson in Geology and Mineralogy; and the desire to cultivate natural science, which had been first awakened by the teaching of Dr. Kidd at Oxford, became predominant in his mind. "The change," as is observed by the author of the obituary notice read to the Ashmolean Society, to which I am mainly indebted for what I have to say concerning Dr. Daubeny, "from thoughtful Oxford to active Edinburgh was the crisis in Daubeny's career. The fight was then raging between Plutonists and Neptunists, Huttonians and Wernerians; and the possesssion of Arthur's Seat and Salisbury Crags was sternly debated by the rival worshippers of fire and water." Daubeny entered keenly into this discussion, and, on quitting the University of Edinburgh, proceeded in 1819 on a tour through France, everywhere collecting evidence on the geological and chemical history of the globe, and sent to Professor Jameson the earliest notices which had appeared in England of the remarkable volcanic region of Auvergne. These Letters may be regarded therefore as Dr. Daubeny's earliest contribution to science, whilst it is interesting to notice that his last, or one of his last, was on the same subject, in a communication to the 'Quarterly Journal of Science' in 1866, in which he defends with much force the prehistoric antiquity of the volcanos, which had been questioned within a few years.

The subject of volcanic phenomena, in fact, may be said to have constantly occupied his attention from the beginning to the end of his scientific career; and in search of information respecting it he made frequent journeys through Italy, Sicily, France, Germany, Hungary, and Transylvania. The result of these labours was given to the world in 1826, in his great work on Volcanos, in which are contained careful descriptions of all known volcanic regions; and a consistent hypothesis of the cause of the thermic disturbance, in accordance with the view first proposed by Gay-Lussac and Davy, viz. that water admitted to the uncombined bases of the earths and alkalies existing below the oxidized crust of the globe, was an efficient cause of local

high temperature and a real antecedent to the earthquake movements and accompanying phenomena. In late years, however, Dr. Daubeny accepted as at least very probable the high interior temperature of the earth, and its agency in certain cases, as of hot springs &c.

In 1822, Dr. Daubeny had succeeded Dr. Kidd as Aldrichian Professor of Chemistry at Oxford; and his position afforded him great advantages in all his investigations which related to the principal subject of his thoughts. The analysis of mineral waters was a constant object of earnest attention, and was carried out by him on a very extensive scale, and wherever he might be. In fact, so far did he carry his zeal in the inquiry, that "by his busy scrutiny of waters in France and Italy, he provoked the suspicious credulity of the natives (who thought he was poisoning their springs), and thus endangered his personal safety."

In 1834, Dr. Daubeny, who had fully qualified himself for the post by a systematic course of study under Decandolle at Geneva, was appointed Professor of Botany, and took up his abode in the "Physic Garden," so famous for the eminent men who had preceded him in the Chair.

"Under his diligent and generous management, with liberal aid from the University, Dr. Daubeny lived to see the old Garden entirely rearranged, enriched with extensive houses, extended in area, and made both attractive and beautiful."

In this pleasant residence he passed the remainder of his life, incessantly active, not only in the discharge of his Professorial duties, but also continually engaged in experimental research of one kind or another. Among the various subjects investigated by him may be mentioned:—vegetation under different conditions of soil &c.; the effect of light on plants; the vitality of seeds, a subject to which he paid very considerable attention for many years, during which he was an active member of a committee appointed to inquire into it by the British Association, and to which committee he acted as reporter. He also instituted researches respecting ozone in the atmosphere, and on the effect of varied proportions of carbonic acid on plants analogous to those of the Coal-measures &c. But with all this he appears never to have lost sight of the important subject of mineral and thermal waters; and in 1830 a paper of his was published in the 'Philosophical Transactions' on the presence of iodine and bromine, and a Re-

port by him for the British Association in 1836 included a general survey of the subject of mineral waters.

Dr. Daubeny was one of the original promoters of the British Association; and it was mainly at his instigation that the Association was invited to hold its second meeting, in 1832, in the academic shades of Oxford. In 1856 he filled the Chair of President of the Association at its meeting in Cheltenham—a fitting honour to him in his native county, and amidst his numerous friends, "who caused a medal to be struck in his honour" on the occasion.

His gentle and amiable disposition and kind demeanour endeared him to all who came within his sphere; and the loss of such a man, "prudent and generous, cheerful and sympathetic, pursuing no private ends, calm amid jarring creeds and contending parties," will long be felt.

The Rev. James Hamilton, D.D., was born on the 27th November 1814, at Paisley. His father was the Rev. Dr. William Hamilton, parish minister of Strathblane, in Stirlingshire. His early life was spent in the manse of Strathblane. His father (who, besides being an able divine, was fond of science) took delight in directing and developing the tastes for science and other studies, which at a very early period showed themselves in his son. After acquiring his preliminary education at Strathblane, he proceeded to the University of Glasgow; and, in addition to the literary and philosophical *curriculum* required of every prospective student of Theology, he attended the classes for Botany, Chemistry, Natural History, and others more strictly medical. Botany was his favourite science; and, during the long summer holiday which separated the College sessions, he had many rambles among the Highland hills in search of plants. Dr. J. D. Hooker was sometimes his companion in these rambles; and the two then formed the resolution to visit Palestine together, and explore its natural productions—a resolution Dr. Hamilton often regretted he had not been able to carry out. His theological studies were prosecuted under Chalmers and others at Edinburgh University. In due course he entered the Church. His first sphere of active duty was at Abernyte, in Perthshire, where he was assistant minister. He was at this time an active member of the Edinburgh Botanical Society. In 1839 he was ordained to the charge of a congregation in Edinburgh, where, however, he remained scarcely two years; for in July 1841 he removed to London to succeed Edward Irving, and

to occupy the large church which had been erected for that remarkable man. From that time till the spring of last year Dr. Hamilton retained his position as Pastor of Regent Square Church, preaching in the same building, though, at the disruption of the Scottish Establishment in 1843, he associated himself with the party who now constitute the English Presbyterian Church. Besides the numerous duties connected with his large and scattered congregation, he was very active in the conduct of the general business of the church. His laborious life, during the 26 years he was in London, told seriously on his constitution; and when disease was superadded, great alarm was entertained by his friends as to the result. In May 1867 his growing indisposition and nervous prostration obliged him to relinquish active work. Though occasionally rallying during the course of the summer, he never really improved. After being confined for some months to his bed, he died at his house in Euston Square on the 24th November 1867, at the age of 53.

Dr. Hamilton was the author of numerous works on theological subjects, which have taken a high position, and obtained a very great circulation. In all these, as well as in his public discourses, he made large use of his extensive acquaintance with the Natural Sciences; and everywhere the precision and accuracy of his knowledge was remarkable. The extent and nature of his scientific attainments may be seen by an examination of his memoir of the naturalist James Wilson of Woodville, or of the pages of 'Excelsior,' a periodical of which he was editor, or, especially, of the botanical articles in Principal Fairbairn's 'Dictionary of the Bible,' which were among the last works in which he was engaged.

Dr. Hamilton was elected a Fellow of the Linnean Society on the 1st February 1848.

Admiral Theobald Jones, F.G.S., was born in Dublin, in the year 1790, the second son of the Rev. J. Jones. He entered the navy on the 1st of June 1803 as first-class volunteer, in the 'Melpomene' frigate, and in the course of the following year was twice engaged in the bombardment of Havre. In 1805 he joined the 'Euryalus,' a 36-gun frigate, and in 1807 was on board the 'Ajax' when that ship took fire and blew up near the Island of Tenedos. He thereupon joined the 'Endymion,' one of the British ships that forced the passage of the Dardanelles. On his return to England he was actively employed in service in the North Sea, Channel, and Me-

diterranean till 1810, and during this period shared in a gallant action with the Toulon fleet. He afterwards proceeded to the South-African station, on his return from which he was promoted to the rank of Commander, and on the 12th May 1827 was appointed Captain of the 'Prince Regent,' 120 guns. In 1858 he became Admiral.

During many years Admiral Jones sat in Parliament for the county of Londonderry.

In the world of science, notwithstanding that he had published scarcely anything, he occupied a very high place as a lichenologist in the estimation of those interested in that branch of Botany. Amongst British lichenologists few, or perhaps none, exceeded him in accurate and precise knowledge, derived from long-continued, assiduous, and original observation, which he allowed nothing to interrupt, even up to the very day of his death.

I am not acquainted with any paper from his pen except a "Report on the progress made in collecting the Irish Lichens," which accompanied the presentation to the Natural-History Society of Dublin of a complete series of specimens of those hitherto collected—and some observations on the "Discovery of spiral fibres in the Thallus of *Evernia prunastri*," which were published in the 'Dublin Quarterly Journal of Science.' He is also cited by Van Krempelhuber as the discoverer of several rare species of Irish and Scotch lichens; but the descriptions, I apprehend, of these were perhaps only in MS., as Admiral Jones maintained an active correspondence with foreign lichenologists. His scientific reputation, therefore, will rest more upon the important and valuable collections he made, which have been presented to the Royal Dublin Society, and which, with the exception of the collection of Mr. Carroll, of Cork, constitute the most complete collection of Irish lichens extant, than upon his published writings. The utility of these collections is much enhanced by their being accompanied with catalogues, which are all written up correctly, and thus render the specimens at once available for study.

Admiral Jones was a man of indomitable energy and industry in the pursuit of his favourite subject, and in the prosecution of his researches not unfrequently exposed himself to risk of fatigue and danger not usually incurred by a septuagenarian. A striking instance of his remarkable powers of endurance is recorded in the account of the following circumstance. About six years before

his death, having ascended one of the highest of the Aberdeenshire mountains, unaccompanied (as he usually went), he was caught, when near the top, in a mist which prevented his tracing the proper descent. In his endeavours to find it, he got into a gully between two rocks, through which a small rivulet ran. The descent was rapid, and losing his footing, the Admiral slid down the wet bank with alarming rapidity. With much presence of mind, however, he struck his chisel into the earth ; and the instrument fortunately hitting a narrow chink, sufficed to check the velocity of his descent, and enabled him to hold on, not a moment too soon, as one of his feet had already reached beyond the edge of a lofty precipice. Aware of his dangerous predicament, he was unable to move, and was compelled to lie on his back holding on with one hand, while the water of the rivulet was running under him, and the rain pouring upon him from above for two nights and the greater part of three days, during which he was unable even to turn himself, and was wholly without sustenance of any kind, as, even had he been in a condition to take it, he never carried food or drink with him on his excursions. In this dangerous position he was, however, fortunately discovered by the country-people, who had turned out *en masse* in search of him.

Admiral Jones was elected into the Society on May 3rd, 1842, and died in Dublin on the 12th of February last.

Sir James South, F.R.S., F.R. Ast. S., &c. was born in London, in the year 1775, and died at his house in South Kensington, on the 19th of October 1867.

Having been destined for the medical profession, he became in due course a Member of the Royal College of Surgeons, and practised his profession for several years in London. But his attention soon became almost entirely absorbed in astronomical inquiries ; and he made numerous observations, which gained him a high reputation. His principal results were published in 1825, under the title of ' Philosophical Memoirs.' But the work upon which his reputation chiefly rests is ' A Catalogue of double Stars,' which was issued by him in conjunction with Sir John Herschel between 1822 and 1823. Of these stars he had observed about 380.

He also aided the late Lord Rosse in the construction of his gigantic telescope, and was one of the founders of the Royal Astronomical Society, of which he was several times President. He was author also of 'The Curiosities of Science,' a work

which contains a good deal of instructive and interesting matter.

Captain Wilfred Dakin Speer, *F.R.G.S.*, *F.Z.S.*, a magistrate of the county of Surrey, was born on the 19th of October 1835, the eldest son of the Rev. Wilfred Speer, Incumbent of the parishes of Thames Ditton and West Moulsey.

After a school education at Beckenham, and subsequently at Hampton, he entered Trinity College, Cambridge, with the intention of eventually studying the law, and proceeded to the degree of M.A.

On the death of his father in October, 1856, having come into possession of an estate of considerable annual value, he relinquished his intention of going to the bar, and obtained a commission in the 1st Middlesex Militia.

In September 1859, Captain Speer went to India on a sporting expedition, and crossed the Himalayas into Thibet and Chinese Tartary. From this expedition he returned in May 1862, bringing with him numerous skins and horns, and other articles which he had collected during his travels, together with a number of most interesting photographic views of the places he had visited. Shortly after his return to England he exchanged from the 1st Middlesex to the 3rd Surrey Militia.

In November 1864, he again proceeded to India, on a second sporting expedition, and shortly after his arrival there joined the British Army, then invading Bhootan, in which he served as a volunteer. But having been attacked with fever, he returned to England in June 1865. In September 1866 his untiring zeal led him to undertake a sporting expedition to Canada, whence he subsequently visited several of the southern states of America, and, passing through the seat of the late war, he proceeded to Cuba, returning to Canada in the spring of 1867. He then determined to cross the Rocky Mountains and visit the Mormon Settlements, and afterwards California, and thence return to England. In the early part of May last, in prosecution of this design, he proceeded to St. Louis on the Missouri with the intention of going by steamer to Fort Brinton, at the foot of the Rocky Mountains. He embarked accordingly in the steamer Octavia, on board which vessel he was shot in the night of the 7th of June, by a soldier belonging to the the United States Army, who had been posted on deck as a sentry to guard from a night attack from the Indians. But it would appear that strong reasons exist for believing that the act was one

of premeditated murder, and we understand that steps are being taken to bring the murderer to justice*.

In a brief notice of Captain Speer's career and untimely end, communicated to the Quebec Mercury of the 9th of July by an officer of the 75th Regiment, with which he passed the preceding winter in Quebec, it is stated that, just before setting out, Captain Speer dreamed that he saw a coffin with "W. D. Speer, died June 17, 1867" on it. This is one of those strange coincidences of the apparent fulfilment of a foreboding which, though by no means inexplicable, yet, whenever they occur, are calculated to excite surprise.

Thomas Pridgin Teale, M.D., F.R.C.S.E., F.R.S., died on the 31st of December, in his 67th year.

Mr. Teale was born at Leeds, the son of Mr. Thomas Teale, a medical practitioner of high repute in that town. Educated for the medical profession, Mr. Teale entered on its practice in conjunction with his father in the year 1823, and soon evinced such knowledge and skill as an operating surgeon, as at a very early period of his career to show that he could not fail to attain an eminent position in his profession. Nor was this anticipation disappointed, seeing that, for many years before his decease, Mr. Teale was reputed one of the most eminent among provincial, and, it may be said, metropolitan surgeons. In the year 1824 he was elected Surgeon to the Leeds Public Dispensary, the duties of which office he continued to discharge for nine years, when he was appointed one of the Surgeons to the Leeds General Infirmary, which afforded him an appropriate field for the display of his ability. He was also one of the founders and most active teachers in the Leeds School of Medicine, which at the present time stands second to none out of the metropolis.

Immersed as Mr. Teale was, from a very early period of his life, in the labours and anxieties of a large and constantly increasing practice, the greater part of his published writings were, as might be expected, devoted to professional subjects, and several of them have deservedly obtained, and will long maintain, great estimation. But, like many others belonging to the medical profession, Mr. Teale, notwithstanding the almost complete absorption of his time and thoughts in the practice of surgery, found leisure and

* In the Gardeners' Chronicle of July 11, 1868, it is stated that William Barry, the soldier who killed Captain Speer, had been brought from Fort Stevenson to Yancton, to be tried for murder.

inclination to devote some attention to natural-history pursuits, and the advancement of science.

He was one of the earliest members, if not founders, of the Leeds Philosophical and Literary Society, in whose proceedings he felt throughout life a warm interest, and in whose management he took an active share, having been twice Vice-President, and from 1838 to his death Honorary Curator in Zoology. He also contributed largely and liberally to the Museum, his contributions consisting chiefly of specimens in every department of natural history (recent and fossil), and of preparations illustrating many important points in comparative anatomy. In 1823 he read a paper before the Society "On the Source and Evolution of Heat in Animals;" in 1825, one on the "Physiology of Plants;" and in 1828–9 he delivered a course of lectures "On the Comparative Anatomy of the Cerebral and Nervous Systems." But the contributions in Natural History which more than any others have obtained for his name a permanent place in the roll of Naturalists, are two papers—"On the Natural History of the Genus *Actinia*," and "On *Alcyonella stagnorum*, a freshwater zoophyte inhabiting ponds near Leeds." To what he states with respect to the anatomy of *Actinia* little of importance has since been added; and both papers afford an admirable instance of the care, fidelity, and acuteness with which he pursued his natural-history studies. His last contribution on zoological subjects, published in 1839, was "On the Cephalopoda;" but so lately as 1852–3 he communicated two valuable geological memoirs—one "On the Fossil Fishes of the Yorkshire Coal-field," and the other "On the Aire Valley and its organic remains."

Jan Van der Hoeven was born at Rotterdam on the 9th of February 1801. Having studied Medicine and the Natural Sciences in the Univerity of Leyden, he practised medicine for some years in Rotterdam. But in 1826 he was appointed Professor Extraordinary, and nine years later Professor in Ordinary of Zoology in the University where he had received his scientific education, and consequently relinquished the practice of his profession. In 1858 he was appointed Director of the Royal Museum of Natural History.

Professor Van der Hoeven was justly regarded as of great eminence in Zoological Science; and his principal work, entitled 'Handboek der Dierkunde,' or Manual of Zoology, which was published at Leyden in the years between 1827 and 1833, and

entirely recast in 1846, has enjoyed an extensive circulation and been translated into English and French. He also published, in French, "Recherches sur l'Histoire Naturelle et l'Anatomie des Limules" in 1838, in 1841 a valuable monograph on the "Potto" of Bosman, and in the following year "Etudes sur l'Histoire Naturelle de la Race des Nègres." Besides these and some other separate books, Professor Van der Hoeven is the author of numerous papers in almost every department of Zoology, for the most part published in the 'Tijdschrift voor natuurlijke Geschiedenis' (of which Journal he was for many years, 1834 to 1845, joint editor with M. W. H. de Vriese), the Annales des Sciences Naturelles, the Nova Acta, &c. Amongst these are many highly valuable contributions to science.

M. Van der Hoeven was well known personally to English naturalists, and was present on several occasions at the Meetings of the British Association, and he was universally esteemed, not more for his scientific acquirements than for his kindly and obliging disposition and simplicity of character.

He was chosen one of our Foreign Members on the 5th of May 1857, and died on the 10th of March in the present year.

The Secretary also announced that ten Fellows and one Foreign Member had been elected since the last Anniversary.

At the Election which subsequently took place, George Bentham, Esq., was re-elected President; William Wilson Saunders, Esq., Treasurer; and George Busk, Esq., and Frederick Currey, Esq., Secretaries. The following five Fellows were elected into the Council, in the room of others going out, viz.:—Thomas Boycott, M.D.; Archibald Campbell, M.D.; Cuthbert Collingwood, M.B.; Daniel Hanbury, Esq.; and Osbert Salvin, Esq.

Dr. Alexander Prior, on the part of the Auditors of the Treasurer's Accounts, read the Balance-sheet, by which it appeared that the total Receipts during the past year, including a Balance of £412 9*s*. 2*d*. carried from the preceding year, amounted to £1792 13*s*. 10*d*., and that the total expenditure during the same period (including the purchase of £200 Great Indian Peninsula Railway Stock) amounted to £1413 17*s*. 10*d*., leaving a Balance in the hands of the Bankers of £378 16*s*.

Receipts and Payments of the Linnean Society from May 1, 1867, *to April* 30, 1868.

	£	*s.*	*d.*
Balance in the hands of the Bankers at the last audit ...	412	9	2
Admission Fees 156 0 0			
Compositions 270 0 0			
Annual Contributions of £2 2*s.* 29 8 0			
Do. do. of £3 0*s.* 573 19 4			
Transactions, Journal, &c. sold 206 11 0			
Extra costs of correction, repaid..... 2 16 6			
Expenses of warming and lighting rooms, repaid by Zoological and Entomological Societies 3 15 0			
Interest on Consols and other Investments 57 14 10			
Grant to Mr. Brady from Royal Society towards the cost of printing his paper on Ostracoda 80 0 0			
	1380	4	8
	£1792	13	10

	£	*s.*	*d.*
Insurance	10	10	0
Repairs and Furniture	5	18	0
Coals, Gas, Tea, Postage, &c.....	96	9	3
Salaries	215	0	0
Expenses of the Society's Publications	766	18	3
Books purchased	64	13	5
Bookbinding	17	6	1
Commission	21	1	4
	£1197	16	4
Invested in Great Indian Peninsular Railway Stock	216	1	6
*Balance in the hands of the Bankers.....	378	16	0
	£1792	13	10

* The above balance includes £94 10*s.* received on account of the expense of Papers not yet completed.

W. WILSON SAUNDERS, *Treasurer.*

The foregoing Accounts have been examined, and the Balance in hand found to be correctly stated at £378 16*s.*

GEORGE BENTHAM, *President.*
J. GWYN JEFFREYS,
ROBERT M'LACHLAN.

R. C. A. PRIOR,
FREDERICK CURREY,
ALFRED WHITE.

May 19th, 1868.

June 4th, 1868.

George Bentham, Esq., President, in the Chair.

The President nominated J. J. Bennett, Esq., J. D. Hooker, M.D., Sir John Lubbock, Bart., and W. W. Saunders, Esq., Vice-Presidents for the ensuing year.

The following Report on the Additions to the Library since the last meeting was read:—

The Publications of Scientific Bodies received since the last meeting have been the following:—

DENMARK:—

Royal Danish Society of Science. Transactions (Skrifter) Ser. 5. Natural History and Mathematical Section vii.; Proceedings (Oversigt) 1866, 1867.

RUSSIA:—

Entomological Society of Russia. Journal (Horæ) v. part 3.

GERMANY:—

Royal Prussian Academy of Sciences. Berlin Proceedings (Monatsbericht) 1867, Dec.

Imperial and Royal Zoologico-botanical Society of Vienna. Transactions (Verhandlungen) xvii. Separate Publications (Winnertz, *Sciarina*; Schumann, Diatoms; Neilreich, Hungarian plants) 3 parts.

Imperial and Royal Geological Institute of Vienna (Reichsanstalt); *Transactions (Verhandlungen) 1867, Nos. 13–18, and 1868, Nos. 1–6; *Journal (Jahrbuch) xvii. part 4, xviii. part 1; *Memoirs (Abhandlungen) iv. parts 7 and 8 (M. Hörnes, Fossil Molluscs of the tertiary basin of Vienna), ii. parts 7 and 8; 23 plates.

Natural History Union for Nassau. Journal (Jahrbücher) xxix.

Natural History Union for Prussian Rhineland and Westphalia. Transactions (Verhandlungen) xxiv.

Physico-medical Society of Würzburg. Transactions (Verhandlungen) new Series, i.

FRANCE:—

Academy of Sciences. Comptes Rendus, 1862 to 1867. 11 vols.

Société Botanique de France. Bulletin 1866, n. 4 & 5. 1867, Revue Bibliographique E. Indexes for 1863 and 1864.

Société Entomologique de France. Annales, Ser. 4, vii.

ITALY :—

Royal Technical Institute of Palermo. Journal of Natural and Economical Sciences, iii. part 4.

AUSTRALIA :—

Philosophical Society of Adelaide. Annual Reports and Transactions, 1867.

SOUTH AMERICA :—

Society of Physical and Natural Sciences of Caraccas, Bulletin (Vargasia), n. 1 to 3.

UNITED STATES :—

Academy of Natural Sciences, Philadelphia. Journal vi. part 2. Proceedings 1867.

GREAT BRITAIN :—

Royal Society. Proceedings xvi. n. 101.

Pharmaceutical Society. Transactions and Journal ix. n. 12.

Royal Physical Society, Edinburgh. Proceedings iii. (1863–4 and 1864–5).

The current numbers of the Periodicals and Serials taken in by the Society, as well as the Journal of the Linnean Society x. n. 44 and 45, and Zoology x. no. 41, are on the table.

The papers on recent Biology contained in the above, and the separate works added to the Library, are as follows :—

MAMMALIA AND GENERAL ZOOLOGY :—

H. Allen. On the conformation of the Mammalian Skull. Proc. Acad. Nat. Sc. Philad. 1867.

W. Andrews. On Ziphius Sowerbiensis. Journ. Linn. Soc. Zool. x.

E. Coues. On a collection of Mammals from Arizona. Proc. Acad. Nat. Sc. Philad. 1867.

A. Ernst. On the Mammifers of Venezuela mentioned by Codazzi. Vargasia (Caraccas), i.

G. v. Frauenfeld. Notes on the Fauna of New Caledonia (Zool. Misc.). On the Fauna of the Nicobar Islands. Trans. Zool.-Bot. Soc. Vienna, xvii.

A. Friedlowsky. On a tailless dog, and on the assimilation of vertebræ. Trans. Zool. Bot. Soc. Vienna, xvii.

A. Hannover. On the formation and development of cartilage in animals, 2 plates. Trans. R. Dan. Soc. Sc. Ser. 5, vii.

G. Horvath. Contributions to the knowledge of the Vertebrata of Upper Hungary. Trans. Zool. Bot. Soc. Vienna, xvii.

D. Jeitteles. On the occurrence of the northern *Sorex pygmæus* in Lower Austria. Trans. Zool. Bot. Soc. Vienna, xvii.

W. Peters. On the os tympanum and oral bones in Monotremata. R. Acad. Berlin, Monatsber. 1867.

J. H. Slack. Mammalogical notes. Proc. Acad. Nat. Sc. Philad. 1867.

J. A. Smith. On a Galago from Old Calabar. Proc. R. Phys. Soc. Edinburgh, iii.

Ornithology :—

J. Cassin. On Icteridæ. On Ramphastidæ. Ornithological notes. Proc. Acad. Nat. Sc. Philad. 1867.

D. G. Elliott. Description of an apparently new *Scops*. Proc. Acad. Nat. Sc. Philad. 1867.

J. Gould. Some additional species of *Entoxeres*. Ann. Nat. Hist., Ser. 4, i.

J. C. Harting. The Birds of Middlesex. 1 vol. post 8vo. 1866. Presented by the Author.

O. Herklotz. On *Œdicnemus crepitans*. Trans. Zool. Bot. Soc. Vienna, xvii.

R. Hill. On *Geotrygon sylvatica*, Gosse. Proc. Acad. Nat. Sc. Philad. 1867.

G. N. Lawrence. On some New Grenada birds, with descriptions of new species. Five new species of Central American birds. Proc. Acad. Nat. Sc. Philad. 1867.

A. v. Pelzeln. On the collection of birdskins sent by J. Haast from New Zealand. Trans. Zool. Bot. Soc. Vienna, xvii.

J. A. Smith. Ornithological notes. Proc. R. Phys. Soc. Edinburgh, iii.

V. v. Tschudi. Notes on the change of colours in some birds. Trans. Zool. Bot. Soc. Vienna, xvii.

Ichthyology :—

R. Brown. On the medicinal and economical value of the Oulachan, *Osmerus pacificus*. Pharmac. Journ. Ser. 2, ix.

E. D. Cope. *Phenacobius*, a new genus of cyprinoid fish from Virginia.

——. On *Hypsilepis*, Baird, and *Photogenis*, Cope, genera of freshwater fish; their species and distribution. Proc. Acad. Nat. Sc. Philad. 1867.

T. Edward. Additional particulars regarding *Couchia Edwardsii*. Journ. Linn. Soc. Zool. x.

A. Günther. Additions to the Ichthyological Fauna of Zanzibar. Diagnoses of new freshwater Fishes from Surinam and Brazil. Ann. Nat. Hist. Ser. 4, i.

A. Hannover. Formation and development of the scales and prickles of cartilaginous Fish, 4 plates. Trans. R. Dan. Soc. Sc. Ser. 5, vii.

R. H. Traquair. Observations on the development of Pleuronectidæ. Proc. R. Phys. Soc. Edinb. iii.

Reptiles and Batrachia :—

E. D. Cope. On the families of the raniform Anura, 1 plate. Journ. Acad. Nat. Sc. Philad. vi.

——. Reptiles of Owen's valley, California. Proc. Acad. Nat. Sc. Philad. 1867.

G. R. v. Frauenfeld. On a living Salamander enclosed in a stone. Trans. Zool. Bot. Soc. Vienna, xvii.

A. Günther. New snakes in the British Museum, 6th account, 3 plates. Ann. Nat. Hist. Ser. 4, i.

F. Luigi and A. Vincenzo. Experimental researches on the heart of *Chelonia caouanna*. Journ. R. Technical Instit. Palermo, iii.

J. A. Smith. On a Chameleon from Old Calabar. Proc. R. Phys. Soc. Edinb. iii.

T. Steindachner. Three new Snakes, 1 plate. Trans. Zool. Bot. Soc. Vienna, xvii.

W. Theobald. Catalogue of Reptiles of British Birma, with description of new or little-known species. Journ. Linn. Soc. Zool. x.

Entomology :—

D. Bilimek. Insects of the grotto of Cacahuamilpa in Mexico. Trans. Zool. Bot. Soc. Vienna, xvii.

C. Brady. The Ailant Silkworm. Pamphlet, 8vo. Sydney, 1868. Presented by Dr. F. Mueller.

J. E. Braselmann. On a monstrous *Blaps obtusa*, 1 plate. Trans. Nat. Hist. Union for Prussian Rhineland and Westphalia, xxiv.

F. Brauer. New exotic Libellulinæ and larva of *Hypochrysa nobilis*, 1 plate. Contributions to the genera of Mantispida. Report on Dr. Kaup's Odonata. New Neuroptera, 1 plate. On *Myrmeleon sinuatum*, Oliv. On Dr. Gerstaecker's objections to the new arrangement of Diptera. New exotic Odonata. Description and metamorphosis of *Dendroleon pantherinus* (fig.). Dimorphism of *Neurothemis*. Trans. Zool. Bot. Soc. Vienna, xvii.

E. D. Cope. Habits of Tipulideous larvæ. Proc. Acad. Nat. Sc. Philad. 1867.

G. R. v. Frauenfeld. Entomological Miscellanies (Several communications, 1 plate). On an insect which devastates the cotton crops in Egypt. On the devastations of the Turnip-beetle. Trans. Zool. Bot. Soc. Vienna, xvii.

A. Fuchs. Observations on Lepidoptera. Journ. Nat. Hist. Un. Nassau, xxix.

V. Graber. Orthoptera of Tyrol, with special reference to their habits of life and geographical distribution, 2 plates. Trans. Zool. Bot. Soc. Vienna, xvii.

H. Hagen. Notes on F. Brauer's Neuroptera of the Voyage of the frigate 'Novara.' Trans. Zool. Bot. Soc. Vienna, xvii.

G. v. Haimhoffen. On an oakgall of *Cynips coriaria*, Hart. Trans. Zool. Bot. Soc. Vienna, xvii.

J. H. Kaltenbach. The German phytophagous insects. Trans. Nat. Hist. Un. for Prussian Rhineland and Westphalia, xxiv.

F. Kowarz. Six new Diptera. Trans. Zool. Bot. Soc. Vienna, xvii.

Dr. Kriechbaumer. A hermaphrodite *Erebia Medea*, Sv. Trans Zool. Bot. Soc. Vienna, xvii.

G. A. Kunstler. Summary of the reports received on the injuries done to forests and agriculture by insects. Trans. Zool. Bot. Soc. Vienna, xvii.

G. Lincecum. On *Œcodonia texana*, Buckl. Proc. Acad. Nat. Sc. Philad. 1867.

F. Löw. Zoological notes. Trans. Zool. Bot. Soc. Vienna, xvii.

J. Mann. Lepidoptera of the Josefsthal on the borders of Croatia. Lepidoptera of Botzen, Trient. Ten new Lepidoptera. Trans. Zoo Bot. Soc. Vienna, xvii.

J. Mik. Contributions to the Dipterological fauna of Austria, 1 plate. Trans. Zool. Bot. Soc. Vienna, xvii.

L. Miller. *Timarcha Lomnickii*, a new species. *Adelops croaticus*, a new species. Trans. Zool. Bot. Soc. Vienna, xvii.

M. Nowicki. New Diptera, 1 plate. Trans. Zool. Bot. Soc. Vienna, xvii.

A. v. Pelikan. On the devastation of corn-crops by *Anisoplia*. Trans. Zool. Bot. Soc. Vienna, xvii.

C. E. Rojas. Entomological Observations. Vargasia (Soc. Phys. Nat. Sc. Caraccas).

A. Rössler. Lepidoptera of Nassau, with special reference to their habits of life and development. Journ. Nat. Hist. Un. Nassau, xxix.

J. R. Schiner. Second report on the Diptera of the voyage of the frigate Novara. On the right place of *Octhiphila litorella*, Fall., in the new system of Diptera. New or little known *Asilida* of the Vienna Cabinet. On the new Dipterous system. Trans. Zool. Bot. Soc. Vienna, xvii.

G. Semper. Development of some E. Asiatic Lepidoptera. Trans. Zool. Bot. Soc. Vienna, xvii.

H. Shimer. *Dactylosphæra*, a new genus of Homoptera. Notes on *Micropus leucopterus*, Say (2 communications). On the insect disease of 1865. Proc. Acad. Nat. Sc. Philad. 1867.

J. A. Smith. On various insects from Old Calabar. Proc. R. Phys. Soc. Edinb. iii.

A. Speyer. The Lepidopterous fauna of the principality of Waldeck. Trans. Nat. Hist. Un. for Prussian Rhineland and Westphalia, xxiv.

F. G. Waterhouse. Notes on a *Stylops*, parasite on bees and wasps. Trans. Phil. Soc. Adelaide, 1867.

Joh. Winnertz. Contributions to a Monograph of *Sciarina*, 1 plate, 8vo. Publications of the Zool. Bot. Soc. Vienna, 1867.

Horæ Societatis Entomologicæ Rossicæ, v. 3.

Annales de la Société Entomologique de France, Ser. 4, vii.

Entomologist and Entomologist's Monthly Magazine for June.

CRUSTACEA AND ARACHNIDA:—

A. Ausserer. Arachnida of Tyrol according to their vertical and horizontal distribution, 2 plates. Trans. Zool. Bot. Soc. Vienna, xvii.

C. S. Bate. Carcinological gleanings, n. 3, 1 plate. Ann. Nat. Hist. Ser. 4, i.

D. Bilimek. Arachnida of the cave of Cacahuamilpa in Mexico. Trans. Zool. Bot. Soc. Vienna, xvii.

G. R. v. Frauenfeld. Notes on exotic spiders. Zool. Misc. in Trans. Zool. Bot. Soc. Vienna, xvii.

L. v. Kempelen. General remarks on spiders. On *Thysa pythonissæformis* (fig.). Trans. Zool. Bot. Soc. Vienna, xvii.

L. Koch. New Arachnida and Myriapoda from Queensland and from the Samoa Islands. New S. European Arachnida and Myriapoda. Trans. Zool. Bot. Soc. Vienna, xvii.

F. Löw. Zoological notes. Arachnoidea. Trans. Zool. Bot. Soc. Vienna, xvii.

Fritz Mueller. On *Balanus armatus* (from Wiegm. Arch. *suprà*, p. xliv.). Ann. Nat. Hist. Ser. 4, i.

H. C. Wood, jun. New Texan Myriapoda. On Californian Myriapoda, with descriptions of new species. Proc. Acad. Nat. Sc. Philadelphia, 1867.

Mollusca :—

A. Adams. On Japanese Helicidæ. Ann. Nat. Hist. Ser. 4, i.

R. Bergh. Anatomical monograph of Æolidiæ, 9 plates. Trans. R. Dan. Soc. Sc. Ser. 5, vii.

R. J. L. Guppy. On the terrestrial Mollusca of Dominica and Grenada; with new species from Trinidad. Ann. Nat. Hist. Ser. 4, i.

J. Lea. New Unionidæ, Melanidæ, &c., chiefly of the United States, 3 plates. Journ. Acad. Nat. Sc. Philad. vi.

———. Five new Unionidæ and one Paludina. Proc. Acad. Nat. Sc. Philad. 1867.

G. R. v. Frauenfeld. A new *Helix* from S. Tyrol (fig.). New Mollusca from Greece. Zool. Misc. in Trans. Zool. Bot. Soc. Vienna, xvii.

L. P. Marrat. Reply to Mr. Ponton on the proposed new species of *Oliva*. Ann. Nat. Hist. Ser. 4, i.

Pfeiffer and Zelebor. Report on some landshells of the voyage of the frigate Novara. Trans. Zool. Bot. Soc. Vienna, xvii.

L. Reeve. Conchologia Iconica, parts 270, 271. Purchased.

Sandberger. On the Conchylia-fauna of Würzburg. Trans. Phys. Med. Soc. Würzburg, Ser. 2, i.

Lower Animals :—

Ehrenberg. Further development of *Hyalonema lusitanicum* and the Spongiaceæ. Proc. R. Acad. Berlin, 1867.

A. Hannover. Observations on the capsular intestinal worms of frogs, 2 plates. Trans. R. Dan. Soc. Sc. Ser. 5, vii.

C. Heller. Bryozoa of the Adriatic, 6 plates. Trans. Zool. Bot. Soc. Vienna, xvii.

H. Krabbe. Helminthological researches in Denmark and Iceland, 7 plates. Trans. R. Dan. Soc. Sc. Ser. 5, vii.

T. S. Wright. Observations on British Zoophytes and Protozoa, 1 plate. Proc. R. Phys. Soc. Edinb. iii.

PHÆNOGAMIC BOTANY :—

H. Ardoino. A new *Cytisus* from Menton. Bull. Soc. Bot. Fr. xiii.

P. Ascherson. On some plants of Kitaibel's herbarium. Trans. Zool. Bot. Soc. Vienna, xvii.

G. Bentham. On the stigmatic apparatus of Goodenovieæ. Journ. Linn. Soc. Bot. x.

O. Röcheler. The Cyperaceæ of the Royal Herbarium, Berlin. Linnæa xxxv.

A. Brongniart and A. Gris. New Caledonian Coniferæ. New Caledonian species of *Symplocos*. Additional New Caledonian Myrtaceæ. On *Chiralia*. Bull. Soc. Bot. Fr. xiii.

D. Clos. On *Helianthemum ledifolium* and its allies.

J. Duval Jouve. On the genus *Crypsis*. Bull. Soc. Bot. Fr. xiii.

A. Ernst. On *Gesneria Vargasii*, DC. Vargasia (Soc. Phys. Nat. Caraccas), i.

E. Fournier. Monograph of the genus *Hesperis*. Bull. Soc. Bot. Fr. xiii.

G. R. v. Frauenfeld. Notes (chiefly economical) on New Caledonian plants. Zool. Misc. in Trans. Zool. Bot. Soc. Vienna, xvii.

C. Grenier. On *Dioscorea pyrenaica*, 1 plate. On two *Sisymbria*. Bull. Soc. Bot. Fr. xiii.

H. F. Hance. On Loureiro's *Fagus Castanea* and some Chinese oaks. Journ. Linn. Soc. Bot. x.

Cte Jaubers. Euphorbiaceæ of Zanzibar, and *Grandidiera*, a new genus of Bixaceæ. Bull. Soc. Bot. Fr. xiii.

J. W. Klatt. On *Euparea*, Banks. Linnæa, xxxv.

Lefevre. On the vegetation of Lower Cochinchina. Bull. Soc. Bot. Fr. xiii.

H. Loret. Botany of the neighbourhood of Montpellier, 2 papers. Bull. Soc. Bot. Fr. xiii.

M. T. Masters. The genus *Cochliostemma*, with a plate (reprint from the Gard. Chron.). Presented by the Author.

M. T. Masters. Synopsis of S. African Restiaceæ. Journ. Linn. Soc. Bot. x.

J. Meehan. On the structure of *Lopezia*. On dicœcious forms of *Vitis vinifera* (2 communications). Proc. Acad. Nat. Sc. Philadelphia, 1867.

Abbé Micqueville. On *Dioscorea pyrenaica*. Bull. Soc. Bot. Fr. xiii.

A. Neilreich. Diagnosis of vascular plants of Hungary and Sclavonia not in Koch's Synopsis, 8vo. Publications of the Zool. Bot. Soc. Vienna, 1867.

R. A. Philippi. On *Adenostemum nitidum*, Pers. (fig.). Bot. Zeit. 1868.

H. W. Reichardt. Miscellaneous notes on Austrian Botany. Trans. Zool. Bot. Soc. Vienna, xvii.

J. Scott. Note on *Isoetes capsularis*, Roxb. Journ. Linn. Soc. Bot. x.

A. H. Smith. On colonies of plants (naturalized plants) near Philadelphia. Proc. Acad. Nat. Sc. Philad. 1867.

M. A. Warion. On some Roman plants. Bull. Soc. Bot. Fr. xiii.

E. Weiss. Notes on the Flora of Istria and Dalmatia. Trans. Zool. Bot. Soc. Vienna, xvii.

J. Wiesbauer. Contributions to the Flora of Presburg. Trans. Zool. Bot. Soc. Vienna, xvii.

J. Windsor. Observations on *Thlaspi alpestre*. Journ. Linn. Soc. Bot. xvii.

A. Wood. *Brevoortia*, a genus of Liliaceæ. Proc. Acad. Nat. Sc. Philad. 1867.

H. C. Wood, jun. On *Salisburia adiantifolia*. Proc. Acad. Nat. Sc. Philad. 1867.

Physiological and Miscellaneous Botany :—

P. T. A. Bruhin. On the changes of Colour in Flowers. Trans. Zool.-Bot. Soc. Vienna, xvii.

Cas. de Candolle. Théorie de la feuille (reprint from the Bibl. Univ. Geneva), 2 plates, 8vo. Presented by the author.

C. Cramer. Morphology of the Ovulum. Bot. Zeit. 1868.

A. Gris. Contributions to the physiological history of Trees. Bull. Soc. Bot. Fr. xiii.

F. Hildebrand. On a Birch-stem enclosed in an Ivy-stem. 1 plate. Trans. Nat. Hist. Un. for Prussian Rhineland and Westphalia, xxiv.

W. Hofmeister. On the curving backwards of the tips of growing roots, 1 plate. Bot. Zeit. 1868.

Cte. Jaubert. Gardens and vegetation of Naples and Ischia. Bull. Soc. Bot. Fr. xiii.

G. Maugin. Quadrifoliation of *Trifolium repens*. Bull. Soc. Bot. Fr. xiii.

L. Netto. On the anomalous structure of the stems of Lianes. Bull. Soc. Bot. Fr. xiii.

S. Reboud. On the root of *Centaurea acaulis*, and its medical use. Bull. Soc. Bot. Fr. xiii.

H. W. Reichardt. A striking deformity in a carrot-root. Trans. Zool. Bot. Soc. Vienna, xvii.

G. de St. Pierre. On *Lagenaria*. Bull. Soc. Bot. Fr. xiii.

Van Tieghem. On the respiration of submerged plants. Bull. Soc. Bot. Fr. xiii.

J. Forbes Watson. Index to the native and scientific names of Indian and other Eastern economic plants and products. 1 vol. large 8vo. Presented by the author.

Cryptogamic Botany :—

M. J. Berkeley and M. A. Curtis. Fungi Cubenses ; Hymenomycetes. Journ. Linn. Soc. Bot. x.

A. Braun. African Characeæ. Proc. R. Acad. Sc. Berlin, 1867.

A. C. J. Corda. Flore Illustrée de Mucédinées d'Europe, 1840, folio, 25 plates. Presented by Mr. Busk.

G. R. v. Frauenfeld. Notes on New Caledonian Cryptogams. Zool. Misc. in Trans. Zool. Bot. Soc. Vienna, xvii.

C. M. Gottsche. A new *Jungermannia*, 1 plate. Trans. Zool. Bot. Soc. Vienna, xvii.

A. Grunow. *Algæ* of the voyage of the frigate Novara, 11 plates, 4to. Purchased.

F. Hazslinsky. Synonyms of *Sphæria Lycii*. Trans. Zool. Bot. Soc. Vienna, xvii.

F. v. Hohenbühel. On *Æcidium albescens*, Grev. On *Panus Sainsonii*, Lev. Trans. Zool. Bot. Soc. Vienna, xvii.

G. Fuzenga. New or other Fungi (continued). Journ. R. Techn. Instit. Palermo, iii.

J. Juratska. Bryological communications. Trans. Zool. Bot. Soc. Vienna, xvii.

G. W. Körbes. Lichens of Istria, Dalmatia, and Albania. Trans. Zool. Bot. Soc. Vienna, xvii.

A. v. Krempelhuber. On *Lichen esculentus*, Pall., 1 plate. Trans. Zool. Bot. Soc. Vienna, xvii.

M. Kuhn. Reliquiæ Mettenianæ (Descriptions of new Ferns). Linnæa, xxxv.

E. Loew. Contributions to the physiology of the lower Fungi. Trans. Zool. Bot. Soc. Vienna, xvii.

R. G. Lorentz. Studies on the natural history of various Mosses, 6 plates. Trans. Zool. Bot. Soc. Vienna, xvii.

F. Luigi and C. Giuseppe. A new Parasite observed on the Bean, 1 plate. Trans. Zool. Bot. Soc. Vienna, xvii.

J. Milde. On *Asplenium fissum*, Kit., and *A. lepidum*, Presl. On various German Ferns. Trans. Zool. Bot. Soc. Vienna, xvii.

——. Filices Criticæ. A new German *Fontinalis*. Bot. Zeit. 1868.

H. Mueller. Stations of Westphalian Mosses. Trans. Nat. Hist. Un. for Prussian Rhineland and Westphalia, xxiv.

N. Nylander. New British Lichens (from the 'Flora'). Ann. Nat. Hist. ser. 4, i.

——. Lichens of the Jardin du Luxembourg. Bull. Soc. Bot. Fr. xiii.

Œrsted. On the connexion of *Podisoma Sabini* and *Rœstelia cancellata*, 3 plates. Trans. R. Dan. Soc. Sc. vii.

——. New experiments on sowing parasitical Fungi whose alternate generations live on different plants (*Podisoma* and *Rœstelia*). 1 plate, also a French summary. Proc. R. Dan. Soc. Sc. 1867.

H. W. Reichardt. Contributions to the Fungus flora of Lower Austria. Trans. Zool. Bot. Soc. Vienna, xvii.

G. de Saint-Pierre. Enumeration of Ambulatorieæ. Bull. Soc. Bot. Fr. xiii.

S. Schulzer v. Müggenburg. Mycological Miscellanies. Trans. Zool. Bot. Soc. Vienna, xvii.

J. Schumann. Diatomes of Upper Tatra. 8vo, 4 plates. Publications of the Zool. Bot. Soc. Vienna, 1867.

E. Weiss. New Dalmatian Lichens. Mosses of Istria and Dalmatia. Trans. Zool. Bot. Soc. Vienna, xvii.

H. C. Wood, jun. On the life-history of some Siphonaceous fresh-water *Algæ*. Proc. Acad. Nat. Sc. Philad. 1867.

G. Zanardini. Iconographia Phycologica Mediterranea, ii. part 3, 4to, 8 plates. Purchased.

Miscellaneous :—

Stoever's Life of Linnæus, translated by G. J. Trapp, 4to, 1794. Presented by Mr. Busk.

The following papers were read, viz. :—

1. "On the Homologies of certain Muscles connected with the Shoulder-joint," by George Rolleston, M.D., F.R.S., and L.S.

2. "Contributions to the history of *Zamites Gigas*," by W. C. Williamson, F.R.S. &c. Communicated by W. Carruthers, Esq., F.L.S.

3. "On the Muscles of the fore and hind limbs of the 6-banded Armadillo," by J. C. Galton, Esq. Communicated by Professor Rolleston, F.L.S., &c.

4. "The Myology of the upper and lower extremities of the *Oryctopus capensis*," by the same.

June 18th, 1868.

George Bentham, Esq., President, in the Chair.

Edwin Story, Esq., and Andrew Swanzy, Esq., were elected Fellows.

The following Report, on the Additions to the Library since the last meeting, was read :—

The Publications of Scientific Bodies received since the last meeting have been the following :—

Germany :—

Imperial Academy of Sciences, Vienna. Transactions (Denkschriften), xxvii. (31 plates, almost exclusively Palæontology and Geology). Proceedings (Sitzungsberichte), first Section, Natural Sciences, lvi. parts 2 to 5. *Second Section, Mathematical and Physical Sciences, lvi. parts 3 to 5.

Natural-History Society of Bremen. Transactions (Abhandlungen) i. part 3.

SWITZERLAND :—

Société Vaudoise des Sciences Naturelles, Lausanne. Bulletin ix. No. 58.

CANADA :—

Canadian Institute. Canadian Journal, ser. 2, xi. n. 66.

GREAT BRITAIN :—

Royal Society. *Proceedings xvi. n. 102.

Royal Asiatic Society. *Journal, new ser. iii. part 1.

Zoological Society. *Transactions vi. part v. 11 plates (Fossil Zoology). Proceedings 1867, part 3.

The current numbers of various periodicals, and the Linnean Society's Journal, Botany, no. 46, are also on the table.

The papers on recent biology contained in the above, and the separate works added to the Library, are the following :—

MAMMALOGY :—

R. C. Beavan. Notes on the Panolia Deer or Thomyn (*Cervus Eldi*). Proc. Zool. Soc. 1867.

E. Blyth. Notes on three Asiatic species of Deer, woodcuts. Proc. Zool. Soc. 1867.

H. Burmeister. A new Finner Whale, *Balænoptera bonaërensis*, woodcuts. Proc. Zool. Soc. 1867.

E. Crisp. Anatomy of the Hippopotamus, woodcuts, 2 papers. Proc. Zool. Soc. 1867.

J. Fitzinger. The races of tame Dogs. The natural family of Erinacei under the present state of science. Proc. Imp. Acad. Sc. Vienna, lvi.

W. H. Flower. Visceral Anatomy of *Hyomoschus aquaticus*, woodcuts. Proc. Zool. Soc. 1867.

J. E. Gray. Additional observations on *Felidæ*. On a new American Tapir, 1 plate and woodcuts. Description of *Ateles Bartlettii*, 1 plate. On Rhinocerotidæ of the British Museum and Royal College of Surgeons, woodcuts. Proc. Zool. Soc. 1867.

T. Hutton. Geographical range of *Semnopithecus Entellus*. Proc. Zool. Soc. 1867.

St. G. Mivart. Additional notes on the Osteology of Lemuridæ, woodcuts. Proc. Zool. Soc. 1867.

J. Murie. On the Platyrhine Wombat, *Phascolomys platyrhinus*. Owen, 1 plate. Proc. Zool. Soc. 1867.

Ornithology:—

A. D. Bartlett. On the habits of the Lyre-bird in captivity. Proc. Zool. Soc. 1867.

W. T. Blanford. A new *Callene* from the Pulney Hills, S. India, 1 plate. Proc. Zool. Soc. 1867.

V. Fatio. On two species of Tetrao in the Musea of Lausanne and Neufchâtel. Bull. Soc. Vaud. ix.

J. Gould. On the Australian genus *Climacteris*. Proc. Zool. Soc. 1867.

G. Hartlaub. Report on Dr. Kirk's Zanzibar Birds. Report on Birds from less-known localities on the Western Pacific, 1 plate. Proc. Zool. Soc. 1867.

Dr. Hector. Notice of an Egg of *Dinornis gigantea*. Proc. Zool. Soc. 1867.

G. D. Rowley. On the Egg of *Æpyornis*. Proc. Zool. Soc. 1867.

P. L. Sclater and O. Salvin. Mr. Bartlett's Birds of the River Huallaga, 1 plate. Mr. Hauxwell's Birds of Pebas, Upper Amazons, 1 plate. Mr. Whitely's Birds of Peru, 1 plate. Proc. Zool. Soc. 1867.

H. B. Tristram. New Birds from South Africa. Proc. Zool. Soc. 1867.

Ichthyology:—

F. Day. New or imperfectly known Fishes of India: two papers. Proc. Zool. Soc. 1867.

F. A. Forch. On the Epizootic Disease in the Perches of the Lake of Geneva in 1867. Bull. Soc. Vaud. ix.

J. Y. Johnson. *Machephilus*, a new genus of *Spinacidæ*, founded upon a shark obtained at Madeira. Proc. Zool. Soc. 1867.

A. Kner. New Fish from the Museum of MM. Godeffroy and Son in Hamburgh. Proc. Imp. Acad. Sc. Vienna, lvi.

G. Krefft. New Australian fresh-water Fishes. Proc. Zool. Soc. 1867.

R. L. Playfair. Fishes of Seychelles, 2 plates and woodcuts. Proc. Zool. Soc. 1867.

F. Steindachner. Ichthyological Notes, part. vi., 3 plates. Ichthyological report on a journey in Spain and Portugal, 9 plates. Proc. Imp. Acad. Sc. Vienna, lvi.

Reptiles and Batrachia :—

J. V. Barboza du Bocage. New Batrachia from Loanda and Benguella, woodcuts. Proc. Zool. Soc. 1867.

W. Lilljeborg. *Halcrosia Afzelii*, a new Crocodile from Sierra Leone, woodcuts. Proc. Zool. Soc. 1867.

St. G. Mivart. On *Plethodon persimilis*, Gray, woodcuts. Myology of *Iguana tuberculata*, woodcuts. Proc. Zool. Soc. 1867.

Entomology :—

A. G. Butler. On the Fabrician species of the Satyride genus *Mycalesis*, woodcuts. On *Nymphalis caledonie*, Hewits. Proc. Zool. Soc. 1867.

F. Moore. Lepidoptera of Bengal, 2 plates. Proc. Zool. Soc. 1867.

Crustacea :—

J. Y. Johnson. A new genus, *Funchalia*, and two new *Penæi* from Madeira. Proc. Zool. Soc. 1867.

Mollusca :—

H. Adams and G. F. Angas. A new species of *Cœliaxis*, 1 plate.

G. F. Angas. Six new *Helicidæ* from the Solomon islands, 1 plate. A new genus, *Alicia*, and some new species of marine Mollusca of Port Jackson, 1 plate. Marine Mollusca of Port Jackson. Proc. Zool. Soc. 1867.

J. C. Cox. New Australian Land-shells. Proc. Zool. Soc. 1867.

J. E. Gray. Calyptreidæ of Cuming's Collection. On *Catillus*, Humphr., and three new genera, *Paria*, *Stenopoma*, and *Orthopoma*, woodcuts. *Saulea*, a new genus of *Ampullariadæ*, from Sierra Leone, woodcut. Proc. Zool. Soc. 1867.

W. Hincks. Molluscous Animals, general observations. Canad. Journ. xi.

Lower Orders of Animals :—

J. S. Bowerbank. On *Hyalonema lusitanicum*. Proc. Zool. Soc. 1867.

J. E. Gray. On Dr. Bowerbank's paper on *Hyalonema lusitanicum*. Proc. Zool. Soc. 1867.

Phænogamic Botany:—

F. Buchanan. Enumeration of Juncagineæ, 1 plate. On a monstrous *Lapageria* flower, 1 plate. Trans. Nat. Hist. Soc. Bremen, i.

W. O. Focke. On German *Rubi*. Trans. Nat. Hist. Soc. Bremen, i.

C. Fritsch. Normal Floral Calender for Vienna. Trans. Imp. Acad. Sc. Vienna, xxvii.

H. F. Hance. Three new Chinese *Compositæ*. Seem. Journ. Bot. vi.

P. J. Hellbom. Report on a Botanical Journey in Herjedal and neighbouring parts of Norway. Flora 1868.

Hooker's Icones Plantarum, xi. part 2. Presented by the President.

M. Willkomm and J. Lange. Prodromus Floræ Hispaniæ. II., part 2. Purchased.

Physiological and Miscellaneous Botany:—

P. P. Dehérain. On the assimilation of mineral substances by plants. Ann. Sc. Nat. Bot. Ser. 4, viii.

F. Hildebrand. On the relation of the stock to the graft. On the direct action of a foreign plant on the fruit. Bot. Zeit. 1868.

E. Peligot. On the distribution of potassium and soda in plants. Ann. Sc. Nat. Bot. Ser. 5, viii.

F. Unger. Botanical excursions into the territory of cultivation. Contributions to the Anatomy and Physiology of Plants, 2 plates. Proc. Acad. Sc. Vienna, lvi.

Cryptogamic Botany:—

J. Hermann. On *Botrydium argillaceum*, Wallr. Flora, 1868.

H. F. Hance. Two new Chinese Ferns. Seem. Journ. Bot. vi.

Famintzin and Baranetzky. On the change of Gonidia of Lichens into Zoopores (From the Petersburgh Bulletin). Ann. Sc. Nat. Bot. Ser. 5, viii.

S. Schwendener. On the relations of the Gonidia of Algæ and those of Lichens. Bot. Zeit. 1868.

Ph. van Tieghem. On the physiological history of Mucedinæ. Ann. Sc. Nat. Bot. Ser. 5, viii.

The following papers were read, viz.:—

1. "On Branched Palms of South India," by John Shortt, M.D., F.L.S., &c.

2. "On the structure of the flower in the genus *Napoleona*, &c." by Maxwell T. Masters, M.D., F.L.S., &c.

3. "On the development of lost parts in the Nemerteans," by W. C. M'Intosh, M.D., F.L.S., &c.

4. "Note on the Dimorphism of flowers of *Cymbidium tigrinum*," by the Rev. Charles Parish. Communicated by Dr. Hooker, F.R.S., V.P.L.S.

5. "On the Copal of Zanzibar," by John Kirk, M.D., F.L.S.

6. "Descriptions of a new genus and six new species of Spiders," by the Rev. O. P. Cambridge. Communicated by James Salter, M.B., F.L.S.

7. "Enumeration of the Palms of Sikkim," by Thomas Anderson, M.D., F.L.S.

8. "Flora of the Hooshiarpur District of the Panjab," by J. E. T. Aitchison, M.D., F.L.S.

9. "Observations on the Septum of the *Cœcidæ*, and remarks on the subject of the suppression of the genera *Brochina* and *Strebloceras*, or *Phleboceras*," by the Marquis L. de Folin. Communicated by Wm. Baird, M.D., F.R.S. and L.S.

10. "Enumeratio Muscorum omnium Austro-Americanorum mihi hucusque cognitorum; eorum præcipue in terris Amazonicis Andinisque Ricardo Spruceo lectorum." Scripsit Gul. Mitten.

11. "On the Fossil Cycadean Stems, from the Secondary Rocks of Britain." By William Carruthers, Esq., F.L.S.

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PAPERS READ (*continued*):—

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RECEIVED FROM JUNE 21, 1867, TO JUNE 20, 1868.

TITLES. DONORS.

ACADEMIES AND SOCIETIES.

Adelaide, S. A. :—

Philosophical Society.

Annual Report and Transactions for the year ending Sept. 30, 1867. 4to. Adelaide, 1867. C. A. WILSON, Esq.

Amsterdam :—

Kon. Akademie van Wetenschappen.

Jaarboek voor 1866. 8vo. Amsterdam.

Verslagen en Mededeelingen. Afd. Letterkunde, Deel 10. 8vo. *Ibid.*, 1866.

Processen-Verbaal van de gewone Vergaderingen der Akademie. Afd. Natuurkunde, van Mei 1866–April 1867. 8vo. THE ACADEMY.

Basel :—

Naturforschende Gesellschaft.

Verhandlungen. Theil 4, Hft. 4. 8vo. Basel, 1867.

Festschrift, herausgegeben von der Naturforschenden Gesellschaft, zur Feier des 50-jährigen Bestehens. 8vo. *Ibid.*, 1867.

Festrede, am 4. Mai, 1867, von Dr. Fritz Burckhardt, "Ueber die physikalischen Arbeiten der Societas Physica Helvetica, 1751–87." 8vo. *Ibid.*, 1867.

THE NATURAL HISTORY SOCIETY, BASEL.

	Titles.	Donors.

Academies and Societies (*continued*).

Batavia :—

Bataviaasch Genootschap van Kunsten en Wetenschappen.

Verhandelingen, Deel 32. 4to. Batavia, 1866.

Tijdschrift voor Indische Taal-, Land-, en Volkenkunde. Deel 14, Afl. 5 & 6, 15, en 16, Afl. 1. 8vo. *Ibid.*, 1864–66.

Notulen van de Algemeene en Bestuursvergaderingen van het B. G. Deel 2, 3, en 4, Afl. 1. *Ibid.*, 1864–66.

Catalogus der Bibliothek van het B. G., door Mr. J. A. van der Chijs. 8vo. *Ibid.*, 1864. The Society.

Natuurkundig Vereeniging voor Nederlandsch Indië.

Natuurkundig Tijdschrift voor Nederlandsch Indië. Deel 29, Afl. 2–4. 8vo. Batavia, 1866. The Association.

Berlin :—

Botanischer Verein für die Provinz Brandenburg, &c.

Verhandlungen. Jahrgang 7 und 8. 8vo. Berlin, 1865–66. The Society.

Kön. Akademie der Wissenschaften.

Abhandlungen, aus dem J. 1866. 4to. Berlin, 1867.

Monatsberichte, für April–December 1867. 8vo. *Ib.* The Academy.

Verein zur Beförderung des Gartenbaues in den Kön. Preussischen Staaten.

Wochenschrift : Redakteur Prof. Dr. Karl Koch. Jahrg. 10, Nos. 1–52. 4to. Berlin, 1867. The Society.

Bombay :—

Government Observatory.

Magnetical and Meteorological Observations made in the year 1864. Fcp. fol. Bombay, 1867. The India Office ?

Bonn :—

Naturhistorischer Verein der Preussischen Rheinlande, &c.

Verhandlungen. Jahrg. 24. 8vo. Bonn, 1867. The Association.

Bordeaux :—

Société des Sciences Physiques et Naturelles.

Mémoires, Tome 4, Cahier 1 (suite), & Tome 4, Cahier 1 & 2. 8vo. Paris &c., 1866–67. The Society.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Boston, Mass. :—

American Academy of Arts and Sciences.

Proceedings, Vol. 7, Sheets 13–23. 8vo. Boston, 1866.

THE ACADEMY.

Society of Natural History.

Memoirs read before the Society; being a new Series of the Boston Journal of Natural History. Vol. 1, Parts 1 & 2. 4to. (Boston) 1866–67.

Proceedings, Vol. 8, Sheets 1–4, Vol. 10, Shs. 19–27, & Vol. 11, Shs. 1–6. 8vo. (*Ib.*) 1861–67.

Condition and Doings of the Society, as exhibited by the Reports of the Custodian, Librarian, &c., May 1866. 8vo. Boston, 1866. THE SOCIETY.

Bremen :—

Naturwissenschaftlicher Verein.

Abhandlungen, Bd. 1, Hft. 3. 8vo. Bremen, 1868.

THE ASSOCIATION.

Brünn, Austr. :—

Naturforschender Verein.

Verhandlungen, Band 5 (1866). 8vo. Brünn, 1867.

THE ASSOCIATION.

Brussels :—

Académie Royale des Sciences.

Mémoires. Tome 36. 4to. Bruxelles, 1867.

Mémoires couronnés, et Mém. des Savants Étrangers. Tome 33. 4to. *Ibid.*, 1867.

——. Collection in 8vo. Tomes 19 & 20. 8vo. *Ibid.*, 1867–68.

Bulletins. 2e Série, Tomes 22–24. 8vo. *Ib.*, 1866–67.

——. Tables générales et analytiques. 2e Série, Tomes 1–20. 8vo. *Ibid.*, 1867.

Annuaire. 33e & 34e Année. 12mo. *Ib.*, 1867–68.

Observations des Phénomènes périodiques, pendant 1864. 4to. THE ACADEMY.

Observatoire Royale.

Annales Météorologiques. 1ère Année. 4to. Bruxelles, 1867.

THE DIRECTOR.

Société Royale de Botanique de Belgique.

Bulletins, Tome 6, Nos. 1 & 2. 8vo. Bruxelles, 1867.

THE SOCIETY.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Buenos Ayres :—

Museo Público.

Anales del Museo Publico ; por German Burmeister, M.D., Director. Entrega 2 & 4. 4to. Buenos Ayres, 1867.

THE EDITOR ?

Calcutta :—

Asiatic Society of Bengal.

Journal. New Series. Part 1, Nos. 1 & 4 for 1866, and Nos. 1 & 2 (1867), and Part 2, No. 1 (1866), & Nos. 1 & 2 (1867). 8vo. Calcutta, 1866–67.

Proceedings, Title, Index, &c. for 1865 ; Nos. 1–5, Title, &c. for 1866, and Nos. 2–11 for 1867. 8vo. *Ibid.*, 1866–67.

THE SOCIETY.

Cambridge :—

Philosophical Society.

Transactions, Vol. 10, pt. 2, and Vol. 11, pt. 1. 4to. Cambridge, 1864–66. THE SOCIETY.

Caracas :—

Sociedad de Ciencias Fisicas y Naturales.

"Vargasia." Boletin de la Sociedad. Tomo 1, Nos. 1–3. 8vo. Caracas, 1868. THE SOCIETY ?

Connecticut. See **New Haven.**

Copenhagen :—

Kongl. Danske Videnskabernes Selskab.

Oversigt over det Kgl. D. V. S. Forhandlinger, i aar 1865, Nos. 1–5, 1866, Nos. 1–7, & 1867, Nos. 1–5. 8vo. Kjöbenhavn.

Skrifter. 5te Række. Naturvid. og Mathem. Afdeling. Bind 6 & 7. 4to. *Ibid.*, 1867–68. THE SOCIETY.

Cornwall :—

R. Cornwall Polytechnic Society.

Annual Report (34th). 8vo. Falmouth, 1866.

THE SOCIETY.

Devonshire Association for the Advancement of Science.

Report and Transactions, Vol. 2, Pt. 1. 8vo. London, 1867.

THE ASSOCIATION.

Dresden :—

Academia Naturæ Curiosorum.

Nova Acta, Tom. 33. 4to. Dresden, 1867. THE ACADEMY.

Titles.	Donors.
Academies and Societies (*continued*).	
Dublin :—	
Royal Dublin Society.	
Journal, No. 36. 8vo. Dublin, 1867.	The Society.
Royal Geological Society of Ireland.	
Journal, Vol. 1, Part 3. 8vo. London, 1867.	The Society.
Edinburgh :—	
Botanical Society.	
Transactions, Vol. 9, Pt. 1. 8vo. Edinburgh, 1867.	The Society.
Royal Society.	
Transactions, Vol. 24, Pt. 3. 4to. Edinburgh, 1867.	
Proceedings, Session 1866–67. (Vol. 6, Nos. 71–73.) 8vo.	
Ibid.	The Society.
Royal Physical Society.	
Proceedings, Sessions 1863–64 and 1864–65. 8vo. Edinburgh.	The Society.
Frankfurt a. M. :—	
Senckenbergische Naturforschende Gesellschaft.	
Abhandlungen, Bd. 6, Hft. 3 & 4. 4to. Frankfurt a. M., 1867.	The Society.
Versammlung Deutscher Naturforscher und Aerzte.	
Tageblatt der 41e Versammlung, Sept. 1867. 4to. Frankfurt a. M. (1867).	The Association.
Geneva :—	
Société de Physique et d'Histoire Naturelle.	
Mémoires, Tome 19, Partie 1. 4to. Genève, 1867.	The Society.
Göttingen :—	
Königl. Gesellschaft der Wissenschaften.	
Abhandlungen, Band 13. 4to. Göttingen, 1868.	
Nachrichten, aus dem J. 1867. 12mo. *Ib.*, 1867.	The Society.
Gravenhage :—	
Nederl. Entomol. Vereeniging. See **Leyden.**	
Hereford. See **Woolhope.**	
Halifax, N. S. :—	
Nova-Scotian Institute of Natural Science.	
Proceedings and Transactions, Vol. 2, Part 1. 8vo. Halifax, N. S., 1867.	The Institute.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

India:—

Forest Reports.

Forest Reports of the Bombay Presidency, for the years 1849–50 to 1855–56, by Surg. Alex. Gibson, F.L.S., and J. E. Stocks, Asst.-Surg., &c. 8vo. Bombay, 1857.

——, from 1856–57 to 1859–60, by A. Gibson, F.L.S., and W. Fenner, Esq. 8vo. *Ibid.*, 1861.

Reports (Annual) on the Sind Forests, for 1858–59 and 1859–60. 8vo. *Ibid.*, 1859–60.

Reports of the Conservator of Forests, Madras, for the years 1861–62 to 1866–67. 4to. Madras, 1862–67.

Memoranda on the Forests of Madras. Fcap. fol. 1864.

Progress Reports of Forest Adminstration in the Central Provinces, by Capt. G. F. Pearson, Dr. D. Brandis, Dr. H. Cleghorn, &c., for 1862–63. 8vo. Calcutta, 1864.

——, for 1863–64, 1865–66, and 1866–67. Fcap. fol. *Ibid.*, 1865–67.

Progress Reports of Forest Administration in British Burmah, by Dr. D. Brandis and H. Leeds, Esq., for 1861–62 and 1862–63. 8vo. (Calcutta) 1863–64.

——, for 1863–64, 1864–65, and 1865–66. Fcap. fol. Calcutta, 1865–67.

Report upon the Deodar Forests of Bussahar, &c., by Dr. Brandis, Dr. J. L. Stewart, and Capt. E. Wood. Fcap. fol. *Ibid.*, 1865.

Report on the Management of the Oudh Forests, for the year ending Sept. 30, 1864. Fcap. fol. *Ibid.*, 1866.

Reports of Forest Administration in Mysore, for 1865–66 and 1866–67, by Lieut. J. G. Van Someren and Dr. H. Cleghorn. Fcap. fol. *Ib.*, 1868.

Papers regarding the Forests and Iron-Mines in Kumaon. 8vo. *Ibid.*, 1855.

Report on the Teak Forests of Pegu; with a Mem. on the Teak in the Tharawaddy Forests, by Dr. Brandis, 1856. Fcap. fol. London, 1860.

Reports on the Teak Forests of Pegu, for the years 1856–1860 and 1860–61 (by Dr. Brandis). 8vo. Calcutta, 1860–62.

Report on the Forests of Tenasserim and Martaban, for 1858–59 and 1859–60. 8vo. *Ibid.*, 1861.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

India (*continued*) :—

Forests Reports (*continued*).

Papers on the Improvement of the Forest Revenue of the Punch Mahals. 8vo. Bombay, 1863.

Observations on the influence of Forests, and on the general principles of management, as applicable to Bombay, by N. A. Dalzell, M.A., &c. 8vo. Bombay, 1863.

THE SECRETARY OF STATE FOR INDIA.

Innsbrück :—

Ferdinandeum für Tirol und Vorarlberg.

Zeitschrift, 3te Folge, Heft 13. 8vo. Innsbrück, 1867.

THE FERDINANDEUM.

Königsberg :—

Königl. Physikalisch-ökonomische Gesellschaft.

Schriften, Jahrg. 6 & 7. 4to. Königsberg, 1865–66.

THE SOCIETY.

Lausanne :—

Société Vaudoise des Sciences Naturelles.

Bulletin (Vol. 9), Nos. 57 & 58. 8vo. Lausanne, 1867–68.

THE SOCIETY.

Leeds :—

Geological and Polytechnic Society of the West Riding.

Report of the Proceedings for 1867. 8vo. Leeds, 1868.

THE SOCIETY.

Philosophical and Literary Society.

Report (47th) of the Council. 8vo. Leeds, 1867.

THE SOCIETY.

Leyden :—

Musei Botanici Lugd.-Bat. Annales. See **Miquel,** *F. A. G.*

Nederlandsche Entomologische Vereeniging.

Tijdschrift voor Entomologie; onder redactie van Prof. J. van der Hoeven, &c. 2de Serie, Deel 1, Afl. 3–6, Deel 2, Afl. 1–6, and Deel 3, Afl. 1. Gravenhage, 1866–67.

THE SOCIETY.

Liége :—

Société Royale des Sciences.

Mémoires, 2e Série, Tome 1. 8vo. Liége, 1866. THE SOCIETY.

London :—

Art-Union.

Report of the Council for 1867. 8vo. London, 1867.

Almanack for 1868. *Ib.* THE ART-UNION.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

London (*continued*):—

British Association for the Advancement of Science.

Report of the 36th Meeting. 8vo. London, 1867.
THE ASSOCIATION.

Entomological Society.

Transactions, 3rd Series, Vol. 3, Pt. 4, Vol. 4, Pts. 2 & 3, and Vol. 5, Pts. 6 & 7. 8vo. London, 1867. THE SOCIETY.

Geological Society.

Quarterly Journal, Vol. 23, Parts 3–5, and Vol. 24, Parts 1 & 2. 8vo. London, 1867–68.

List of Members for 1867. 8vo. *Ib.*, 1867. THE SOCIETY.

Palæontographical Society's Publications, Vol. 20. 4to. London, 1867 (including):—

1. **Duncan,** *P. M.* Monograph of the British Fossil Corals. 2nd Series, Pt. 4, No. 1.
2. **Salter,** *J. W.* Monograph of the British Trilobites. Part 4.
3. **Davidson,** *Thomas.* Monograph of the British Fossil Brachiopoda. Pt. 7, No. 2 (Silurian).
4. **Phillips,** *John.* Monograph of the British Belemnitidæ. Part 3. PURCHASED.

Pharmaceutical Society.

Pharmaceutical Journal and Transactions. 2nd Series, Nos. 97–108. 8vo. London, 1867–68. THE SOCIETY.

Quekett Microscopical Club.

Journal, Nos. 1 & 2. 8vo. London, 1868. THE CLUB.

Ray Society. See **Brown,** *Robert*, and **Parker,** *W. K.*

Royal College of Physicians.

List of the Fellows, Members, &c. 8vo. 1868.
THE COLLEGE.

Royal Institution of Great Britain.

Proceedings, Vol. 5, Part 2 (No. 46). 8vo. London, 1867.
THE INSTITUTION.

Royal Society.

Philosophical Transactions, Vol. 156, Pts. 1 & 2, and Vol. 157, Pt. 1. 4to. London, 1866–67.

Proceedings, Nos. 93–102. 8vo. *Ibid.*, 1867–68.

Catalogue of Scientific Papers (1800–1863). Vol. 1. 4to. *Ibid.*, 1867.

List of Members for 1866 & 1867. 4to. THE SOCIETY.

TITLES.	DONORS.

ACADEMIES AND SOCIETIES (*continued*).

London (*continued*):—

Royal Agricultural Society.

Journal, 2nd Series, Vol. 3, Pt. 2, and Vol. 4, Pt. 1. 8vo. London, 1867–68. — THE SOCIETY.

Royal Geographical Society.

Journal, Vol. 36. 8vo. London, 1866.

Proceedings, Vol. 11, Nos. 3–6, and Vol. 12, No. 1. 8vo. *Ib.*, 1867–68. — THE SOCIETY.

Royal Horticultural Society.

Journal, New Series (Vol. 2), Pt. 5. 8vo. London, 1868.

Proceedings, New Series, Vol. 1, Nos. 8–10. 8vo. *Ibid.*, 1867–68. — THE SOCIETY.

Royal Medical and Chirurgical Society.

Medico-Chirurgical Transactions, Vol. 50 (=2nd Series, Vol. 32). 8vo. London, 1867.

Proceedings, Vol. 5, No. 8, and Vol. 6, No. 1. 8vo. *Ibid.*, 1867–68. — THE SOCIETY.

Royal Microscopical Society.

President's Address for the year 1867–68. 8vo. See also **Journals.** — THE SOCIETY.

Society of Arts, &c.

Journal, Nos. 761–812. 8vo. London, 1867–68. — THE SOCIETY.

Zoological Society.

Transactions, Vol. 6, Pts. 3–5. 4to. London, 1867–68.

Proceedings of the Scientific Meetings (with Illustrations), Part 16 (1848), Part 3 for 1866, and Part 1–3 for 1867. 8vo. *Ibid.*, 1866–67.

—— ——, Index, 1830–47, and 1848–60. 8vo. *Ibid.*, 1863–66. — THE SOCIETY.

Lund:—

University.

Acta. (Års-skrift.) Mathematik och Naturvetenskap for år 1865. 4to. Lund, 1865–66. — THE UNIVERSITY.

Lyon:—

Académie Imp. des Sciences, &c.

Mémoires. Nouvelle Série. Classe des Sciences. Tomes 14–16. 8vo. Lyon &c., 1864–67.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Lyon (*continued*) :—

Académie Imp. des Sciences (*continued*).

Mémoires. Nouvelle Série. Classes des Lettres. Tome 12. 8vo. *Ib.*, 1864–65. THE ACADEMY.

Société Imp. d'Agriculture, Histoire Naturelle, &c.

Annales des Sciences Physiques et Naturelles. 3e Série, Tomes 9 & 10. 8vo. Lyon, 1865–66. THE SOCIETY.

Société Linnéenne.

Annales. Nouvelle Série, Tome 14. 8vo. Paris, 1867. THE SOCIETY.

Melbourne. See **Victoria.**

Montreal :—

Natural History Society.

Canadian Naturalist and Geologist. New Series, Vol. 3, Nos. 1 & 2. 8vo. Montreal, 1866. THE SOCIETY.

Moscow :—

Société Impériale des Naturalistes.

Bulletin, Tome 39, Nos. 3 & 4, and Tome 40, Nos. 1 & 2. 8vo. Moscou, 1866–67. THE SOCIETY.

Munich :—

Kön. Bayerische Akademie der Wissenschaften.

Abhandlungen der Mathematisch-physikalischen Classe. Band 10, Abth. 1. 4to. München, 1866.

Sitzungsberichte. Jahrg. 1867, Bd. 1, Hft. 1–4, and Bd. 2, Hft. 1–3. 8vo. *Ib.*, 1867. THE ACADEMY.

Naples :—

Società Reale. Accademia delle Scienze Fisiche e Matematiche.

Rendiconto. Anno 4, Fasc. 5–12 ; 5 (fasc. 1–12), e 6, Fasc. 1–5. 4to. Napoli, 1865–67. THE ACADEMY.

Newcastle-upon-Tyne :—

Natural History Society of Northumberland and Durham.

Transactions, Vol. 1, Part 3. 8vo. London, 1867. THE SOCIETY.

New Haven, Connecticut :—

Academy of Arts and Sciences.

Transactions. Vol. 1, Part 1. 8vo. New Haven, 1866. THE ACADEMY.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

New York :—

Lyceum of Natural History.

Annals, Vol. 8, Nos. 11–14. 8vo. New York, 1866–67.
THE LYCEUM.

Palermo :—

R. Istituto Tecnico. Consiglio di Perfezionamento.

Giornale di Scienze Naturali ed Economiche. Vol. 2, Fasc. 2–4, & Vol. 3, Fasc. 1–4. 4to. Palermo, 1866–67.
THE INSTITUTE.

Paris :—

Académie des Sciences.

Comptes rendus hebdomadaires des Séances de l'Académie. Tomes 55–65. 4to. Paris, 1862–67. THE ACADEMY.

Muséum d'Histoire Naturelle.

Nouvelles Archives du Muséum, Tomes 1 & 2, & Tome 3, Fasc. 1 & 2. 4to. Paris, 1865-67. THE MUSEUM.

Société Botanique de France.

Bulletin, Tome 10, No. 9, Tome 11, Session Extraordinaire en Juillet, 1864, Tome 13, Comptes Rendus, Nos. 3–5, & Revue Bibliogr., E & F., & Tome 14, Rev. Bibl. A, B, C, D, E, & F, & Tables de Tomes 10 & 11. 8vo. Paris, 1863–67. THE SOCIETY.

Société Entomologique de France.

Annales, Tome 3. 8vo. Paris, 1834.
W. S. DALLAS, Esq., F.L.S.

———. 4e Série, Tome 7. 8vo. *Ib.*, 1867–68.
THE SOCIETY.

Société Imp. d'Acclimatation.

La Production Animale et Végétale. (Études faites à l'Expos. Univers. de 1867.) 8vo. Paris, 1867.
M. SOUBEIRAN.

Universal Exhibition, 1867.

Catalogue of Contributions transmitted from British Guiana. 8vo. London, 1867.
THE COM. OF CORRESP. OF BRITISH GUIANA.

Petersburg :—

Académie Imp. des Sciences.

Mémoires, 7e Série, Tome 10, Nos. 3–16, & Tome 11, Nos. 1–8. 4to. St. Pétersbourg, 1866–67.

Bulletin, Tome 10, Tome 11, & Tome 12, No. 1. 4to. *Ib.*, 1866–67. THE ACADEMY.

	Titles.	Donors.

Academies and Societies (*continued*).

Petersburg (*continued*):—

Societas Entomologica Rossica.

Horæ Societatis Entomologicæ Rossicæ. Tomi 3 & 4, & Tom. 5, Nos. 1–3. 8vo. Petropoli, 1865–67. The Society.

Philadelphia:—

Academy of Natural Sciences.

Journal, New Series, Vol. 6, Part 2. 4to. Philadelphia, 1867.

Proceedings for 1867. 8vo. *Ib.*, 1867. The Academy.

American Philosophical Society.

Proceedings, Vol. 10, No. 76. 8vo. Philadelphia, 1866. The Society.

Plymouth:—

Plymouth Institution and North Devon and Cornwall Natural History Society.

Annual Report and Transactions. Vol. 2, Part 2. 8vo. Plymouth, 1867. The Institution.

Regensburg:—

Kön. Bayerische Botanische Gesellschaft.

Flora, neue Reihe. Jahrgang 25, Nos. 15–36, & Jahrg. 26, Nos. 1–12. 8vo. Regensburg, 1867–68. Purchased.

Reigate:—

Holmsdale Natural History Club.

Proceedings, for the years 1865–66 & 1866–67. 8vo. London.

Natural History of Reigate and its vicinity. 8vo. London.

List of Coleoptera, Parts 1 & 2, by John Linnell, jun.

List of the Land and Freshwater Mollusca, by G. S. and E. Saunders. Ed. 1 & 2.

Flora of Surrey: compiled from the papers of the late J. D. Salmon, by J. A. Brewer. 12mo. *Ib.*, 1863. The Club.

Salem, Mass.:—

Essex Institute.

Proceedings, Vol. 4, and Vol. 5, Nos. 1–4. 8vo. Salem, 1864–67. The Institute.

Titles.	Donors.

Academies and Societies (*continued*).

Stettin :—

Entomologischer Verein.

Entomologische Zeitung. Jahrgang 28. 8vo. Stettin, 1867.
The Society.

Sydney, N.S.W. :—

Acclimatisation Society of New South Wales.

Annual Report (6th). 8vo. Sydney, 1867. The Society ?

Toronto :—

Canadian Institute. See **Journals.**

Trinidad :—

Scientific Association.

Proceedings, Part 2. 8vo. Port of Spain, 1867.
The Association.

Turin :—

Reale Accademia delle Scienze.

Memorie, Serie 2, Tom. 22 e 23. Scienze Fisiche e Matematiche. 4to. Torino, 1865–66.

Atti, Vol. 1, Disp. 3–7, e Vol. 2, Disp. 1–7. 8vo. *Ib.*, 1866–67. The Academy.

Venice :—

R. Istituto Veneto di Scienze, Lettere ed Arti.

Memorie, Vol. 13, Pte. 3. 4to. Venezia, 1867.

Atti, Serie 3, Tomo 12, Disp. 4–9. 8vo. *Ib.*, 1866–67.
The Institute.

Victoria :—

Royal Society.

Transactions and Proceedings, Vol. 8, Parts 1 & 2. 8vo. Melbourne, 1867–68. The Society.

Vienna :—

Kaiserl. Akademie der Wissenschaften. Math.-nat. Classe.

Denkschriften, Bd. 26 & 27. 4to. Wien, 1867.

Sitzungsberichte, Bd. 54, Abth. 1, Hft. 4 & 5, & Abth. 2, Hft. 5; Bd. 55, Abth. 1, Hft. 1–5, & Abth. 2, Hft. 1–5; und Bd. 56, Abth. 1, Hft. 1–5, & Abth. 2, Hft. 1–5. 8vo. *Ib.*, 1867.

Anzeiger. Jahrgang 1, No. 16, J. 3, No. 25, J. 4, Nos. 16–30, und J. 5, Nos. 1–14. 8vo. *Ib.*, 1864–68.
The Academy.

	Titles.	Donors.
Academies and Societies (*continued*).		
Vienna (*continued*) :—		
Kaiserl. Akad. der Wissenschaften (*continued*).		
Reise der Œsterreichischen Fregatte 'Novara' um die Erde, in den Jahren 1857–59, unter den Befehlen des Commodors B. von Wüllerstorf-Urbair.		
Zoologischer Theil.		
Band 1. 4to. Wien.		
Vögel, von August von Pelzeln. 1865.		
Fische ; bearbeitet von Dr. Rudolf Kner. Abth. 1–3. 1865–67.		
Reptilien, von Dr. Franz Steindachner. 1867.		
Amphibien, von Dr. F. Steindachner. 1867.		
Band 2. 4to. *Ibid.*		
Hemipteren, von Dr. G. L. Mayr. 1866.		
Hymenoptera (Vespiden, Sphegiden, &c.), von Dr. Henri de Saussure & Dr. J. Sichel. 1867.		
—— (Formicidæ), von Dr. Gustav L. Mayr. 1865.		
Lepidoptera, von C. & R. Felder. Hft. 1–3. 1865–67.		
Neuroptera, von Friedr. Brauer. 1866.		
Crustaceen, von Dr. C. Heller. 1865.		
Mollusken ; von Georg, Ritter von Frauenfeld. 1867.		
Anneliden ; von Dr. Eduard Grube. 1867.		
Botanischer Theil.		
Band 1. 4to. Wien.		
Algen, bearbeitet von A. Grunow. 1868.		Purchased.
K. K. Geologische Reichsanstalt.		
Abhandlungen, Bd. 4, Hft. 7 & 8. (=**Hörnes,** *M.*, Foss. Mollusken des Tertiär-Beckens von Wien, Bd. 2, Nos. 7 & 8.) 4to. Wien, 1867.		
Jahrbuch, Band 17, Nos. 1–4, & Bd. 18, No. 1. 8vo. *Ib.*, 1867–68.		
Verhandlungen, 1867, Nos. 10–18, & J. 1868, Nos. 1–6. 8vo. *Ib.*, 1867–68.		The Institute.
K. K. Zoologisch-Botanische Gesellschaft.		
Verhandlungen, Band 17. 8vo. Wien, 1867.		The Society.
Washington :—		
Smithsonian Institution.		
Annual Report of the Board of Regents for 1865. 8vo. Washington, 1866.		

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Washington (*continued*):—

Smithsonian Institution (*continued*).

Smithsonian Miscellaneous Collections, Vols. 6 & 7. 8vo. *Ib.*, 1867. THE INSTITUTION.

Wiesbaden:—

Nassauischer Verein für Naturkunde.

Jahrbücher, Hft. 19 & 20. 8vo. Wiesbaden, 1864–66. THE ASSOCIATION.

Woolhope:—

Naturalists' Field Club.

Transactions: including Part 1st of the Flora of Herefordshire; by the Rev. W. H. Purchas, L.Th. 8vo. Hereford, 1867. GEORGE BENTHAM, Esq., Pres. L.S.

Würzburg:—

Physikalisch-Medicinische Gesellschaft.

Würzburger Medicinische Zeitschrift: redigirt von H. von Bamberger, &c. Band 7, Hft. 4–6. 8vo. Würzburg, 1867.

—— Naturwissenschaftliche Zeitschrift: redigirt von F. Sandberger, &c. Band 6, Hft. 4. 8vo. *Ib.*, 1866–67.

Verhandlungen, Neue Folge. Band 1, Hft. 1. 8vo. *Ib.*, 1868. THE SOCIETY.

Zurich:—

Naturforschende Gesellschaft.

Vierteljahrsschrift, Jahrg. 9–11. 8vo. Zurich, 1864–66. THE SOCIETY.

Journals:—

Annales des Sciences Naturelles. 5^{e} Série. Botanique, Tome 7, Nos. 1–6, & Tome 8, Nos. 1–4; Zoologie, Tome 7, Nos. 2–6, & Tome 8, Nos. 1–4. 8vo. Paris, 1867. PURCHASED.

Annals and Magazine of Natural History. 3rd Series, Nos. 115–120, and 4th Series, Vol. 1, Nos. 1–6. 8vo. London, 1867–68. Dr. FRANCIS, F.L.S.

Archiv für Naturgeschichte; gegründet von A. F. A. Wiegmann; fortgesetzt von W. F. Erichsen, &c. Jahrg. 33, Heft 1–4. 8vo. Berlin, 1867. PURCHASED.

	TITLES.	DONORS.

Journals (*continued*):—

Athenæum. Parts 474–85 (=Nos. 2066–2118). 4to. London, 1867–68. THE PUBLISHERS.

Botanical Magazine. 3rd Series: continued by J. D. Hooker, M.D., F.R.S., L.S., &c. Nos. 271–82. 8vo. London, 1867–1868. PURCHASED.

Botanische Zeitung. Redaction: H. von Mohl und A. de Bary. Jahrgang 25, Nos. 21–52, und Jahrg. 26, Nos. 1–20. 4to. Leipzig, 1867–68. PURCHASED.

Canadian Journal of Industry, Science, and Art. New Series, Nos. 65 & 66. 8vo. Toronto, 1867. THE CANADIAN INSTITUTE.

Canadian Naturalist and Geologist. See ACADEMIES, &c., **Montreal.**

English Botany. See **Smith,** *J. E.*, &c.

Entomologist: edited by E. Newman, Esq., F.L.S., &c. Nos. 43–54. 8vo. London, 1867–68. THE EDITOR.

Entomologist's Monthly Magazine: conducted by H. G. Knaggs, M.D., R. M'Lachlan, Esq., &c. Nos. 38–49. 8vo. London, 1867–68. THE EDITORS.

Flora. See ACADEMIES, **Regensburg.**

Gardeners' Chronicle and Agricultural Gazette. Nos. 25–52 for 1867, and Nos. 1–24 for 1868. 4to. London. PURCHASED.

Geological Magazine, or Monthly Journal of Geology: with which is incorporated 'the Geologist.' Edited by T. R. Jones, F.G.S., Henry Woodward, F.G.S., &c. Vols. 1 & 2. 8vo. London, 1864–65. PURCHASED.

——. Vols. 3 & 4, and Vol. 5, Nos. 1–6. 8vo. London, 1866–68. THE EDITOR.

Ibis; a Quarterly Journal of Ornithology. New Series, edited by Alfred Newton, M.A., F.L.S., &c. Vol. 3, Nos. 11 & 12, and Vol. 4, Nos. 13 & 14. 8vo. London, 1867–68. PURCHASED.

Illustration Horticole; Journal spécial des Serres et des Jardins: rédigé par Ch. Lemaire. Tome 14, Livr. 5–12, & Tome 15, Livr. 1–5. 8vo. Gand, 1867–68. M. A. VERSHAFFELT.

Insect Hunter's Year-book for 1867. 8vo. London, 1868. The Editor, E. NEWMAN, F.L.S.

Jahrbücher für wissenschaftliche Botanik: herausgegeben von

TITLES. DONORS.

Journals (*continued*):—

Dr. N. Pringsheim. Band 6, Hft. 1 & 2. 8vo. Leipzig, 1867. PURCHASED.

Journal de Conchyliologie; publié sous la direction de MM. Crosse et Fischer. 3e Série, Tome 7, Nos. 3 & 4, & Tome 8, Nos. 1 & 2. 8vo. Paris, 1867–68. PURCHASED.

Journal of Botany, British and Foreign: edited by Berthold Seemann, Ph.D., F.L.S. &c. Nos. 55–66. 8vo. London, 1867–68. PURCHASED.

Journal of Travel and Natural History: edited by Andrew Murray, F.L.S. Vol. 1, Nos. 1–3. 8vo. London, 1868. THE EDITOR and PUBLISHER.

Linnæa. Ein Journal für die Botanik: herausgegeben von D. F. L. von Schlechtendal. Band 34, Heft 4. 8vo. Halle, 1865.

——. Neue Folge. B. 1, Hft. 1–5: herausgegeben von Dr. Aug. Garcke. 8vo. Berlin, 1867–68. PURCHASED.

Malakozoologische Blätter: als Fortsetzung der Zeitschrift für Malakozoologie: herausgegeben von Dr. Louis Pfeiffer. Bd. 14, Bog. 7–14, und Bd. 15, Bog. 1–5. 8vo. Cassel, 1867–68. PURCHASED.

Naturhistorisk Tidskrift: udgivet af Henrik Kröyer. Ny Række. Bind 2, Hft. 2 & 3. 8vo. (Kjöbenhavn, 1846–47.) PURCHASED.

Pharmaceutical Journal. See ACADEMIES &c. **London.** Pharmaceutical Society.

Philosophical Magazine and Journal of Science. 4th Series, Nos. 226–239. 8vo. London, 1867–68. DR. FRANCIS, F.L.S.

Popular Science Review, edited by Henry Lawson, M.D. Nos. 24–27. 8vo. London, 1867–68. The Publisher, R. HARDWICKE, Esq., F.L.S.

Quarterly Journal of Microscopical Science: edited by E. Lankester, M.D., F.R.S., and G. Busk, F.R.S., Sec. L.S. New Series, Nos. 27–30. 8vo. London, 1867–68. THE R. MICROSCOPICAL SOCIETY.

Refugium Botanicum: Part 1, edited by W. W. Saunders, Esq., F.R.S. & L.S. The descriptions by H. G. Reichenbach, and J. G. Baker, F.L.S.; the plates by W. H. Fitch. 8vo. London, 1868. W. W. SAUNDERS, Esq., F.L.S.

Tijdschrift voor Entomologie. See ACADEMIES, &c. **Leyden.**

TITLES. DONORS.

Journals (*continued*):—

Zeitschrift für wissenschaftliche Zoologie: herausgegeben von C. T. von Siebold und Albert Kölliker. Band 17, Hft. 3 & 4, & Bd. 18, Hft. 1. 8vo. Leipzig, 1867–68. PURCHASED.

Zoologist: edited by Edward Newman, F.L.S., &c. 2nd Series, Nos. 22–33. 8vo. London, 1867–68. PURCHASED.

Anderson, *Thomas,* and **Cleghorn,** *James.* Report, to the Secretary to the Government of Bengal, on the cultivation and growth of the Mahogany-Tree (Swietenia Mahogani) in Bengal. fol. (1867.) THE AUTHORS?

Babington, *C. C.* Manual of British Botany. 5th edition. 12mo. London, 1862.

——. ——. 6th edition. 12mo. *Ib.*, 1867.

——. Syllabus of Lectures on Botany. 8vo. Cambridge, 1868. THE AUTHOR.

Bailey, *Charles.* Notes on varieties of Sarothamnus scoparius, Koch, and Stachys betonica, Benth. 8vo. London, 1868. THE AUTHOR.

Baily, *W. H.* On Fossil Plants from the South of Ireland. 8vo. (1866.) THE AUTHOR.

——. Figures of characteristic British Fossils; with descriptive remarks. Part 1 (coloured and uncoloured). 8vo. London, 1867. THE AUTHOR.

Baker, *J. G.* North Yorkshire: studies of its Botany, Geology, Climate, and Physical Geography. 8vo. London, 1863. PURCHASED.

Balfour, *Edward.* The Timber-trees, Timber, and Fancy Woods, as also the Forests, of India and of E. & S. Asia. 2nd edition. 8vo. Madras, 1862. THE SECRETARY OF STATE FOR INDIA.

Beddome, *R. H.* The Trees of the Madras Presidency. 8vo. Madras, 1863. THE SECRETARY OF STATE FOR INDIA.

Bentham, *G.*, et **Hooker,** *J. D.* Genera Plantarum, ad exemplaria imprimis in Herbariis Kewensibus servata definita. Vol. 1, Pars 3. 8vo. Londini, 1867. THE AUTHORS.

Blair, *Patrick.* Pharmacobotanologia, a Dissertation on all the British Indigenous and Garden Plants of the London Dispensatory. Dec. 1–7. 4to. London, 1723–28.

TITLES. DONORS.

Boheman, *C. H.* Spetsbergens Insekt-Fauna. 8vo. 1865.
DR. MALMGREN.

Boissier, *Edmond.* Flora Orientalis: s. Enumeratio Plantarum in Oriente, a Græcia et Ægypto ad Indiæ fines hucusque observatarum. Vol. 1. Thalamifloræ. 8vo. Basileæ, 1867.
PURCHASED.

Bommer, *J. E.* Monographie de la Classe des Fougères. 8vo. Bruxelles, &c., 1867. THE AUTHOR.

Boott, *Francis.* Illustrations of the genus Carex. Part 4. fol. London, 1867. MRS. BOOTT.

Boutigny, , et **Gay,** *Jacques.* Note sur une espèce nouvelle d'Æthionema. (Bull. Soc. Bot. France, 1857.) 8vo. Paris.
DR. HOOKER, V.P.L.S. &c.

Brady, *Charles.* On the Ailant Silk-worm. Observations on its habits, management, food, and value. 8vo. Sydney, 1868.
DR. FERD. VON MÜLLER, F.R.S.

Brandis, *D.* See **India.** Forest Reports.

Brown, *Robert.* Miscellaneous Botanical works. Vol. 2, edited by J. J. Bennett, Esq., F.R.S., &c. (Ray Soc. publ.) 8vo. London, 1867. PURCHASED.

Brown, *Robert.* On the Nature of the Discoloration of the Arctic Seas. (Farmer, Jan. 1, 1868.) fcp. fol.
THE AUTHOR?

Buller, *Walter.* Essay on the Ornithology of New Zealand. (New Zealand Exhibition, 1865.) 8vo. Otago, N.Z., 1865.
THE AUTHOR.

Bullmore, *W. K.* Cornish Fauna. 8vo. Truro, 1867.
THE AUTHOR.

Burmeister (*G.*) See ACADEMIES. **Buenos Ayres.**

Clark, *Rev. Hamlet.* Letters Home, from Spain, Algeria, and Brazil. 8vo. London, 1867. THE AUTHOR.

Cleghorn, *Hugh.* The Forests and Gardens of South India. 12mo. London, 1861. THE SECRETARY OF STATE FOR INDIA.

——. See **India.** Forest Reports.

Colenso, *William.* Essay on the Botany of the North Island of New Zealand. (N. Z. Exhibition, 1865.) 8vo. Otago, N.Z., 1865. THE AUTHOR.

Collingwood, *Cuthbert.* Rambles of a Naturalist on the shores and waters of the China Sea. 8vo. London, 1868.
THE AUTHOR.

TITLES. DONORS.

Corda, *A. C. J.* Flore Illustrée de Mucédinées d'Europe. fol. Leipzig, 1840. G. BUSK, Esq., Sec. L.S. &c.

Couch, *Jonathan.* History of the Fishes of the British Islands. 4 vols. 8vo. London, 1867. THE AUTHOR.

Dalzell, *N. A.* See **India.** Forest Reports.

Darwin, *Charles.* The Variation of Animals and Plants under Domestication. 2 vols. 8vo. London, 1868. THE AUTHOR.

Daubeny, *Charles.* On the Temperature of the Ancient World. 8vo. 1867.

—— Miscellanies; being a collection of Memoirs and Essays on Scientific and Literary subjects. 2 vols. 8vo. Oxford and London, 1867. THE AUTHOR.

Daubeny, *Charles, G. B.*, Obituary Notice of, by *J.* **P.** 8vo. 1868. THE AUTHOR.

Davidson, *Thomas.* See ACADEMIES. **London.** Palæontogr. Soc.

De Candolle, *Alph.* Lois de la Nomenclature Botanique. 8vo. Paris, 1867.

—— Lois de la Nomenclature Botanique adoptées par le Congrès International de Botanique, tenu en Août, 1867. 8vo. *Ibid.* THE AUTHOR.

De Candolle, *Casimir.* Théorie de la Feuille. 8vo. Genève, 1868. THE AUTHOR.

Denny, *Henry.* On the Geological and Archæological contents of the Victoria and Dowkerbottom Caves in Craven. 8vo. Leeds, 1860.

—— On the former existence of the Roebuck in the West Riding of Yorkshire. 8vo. (*Ibid.*).

—— Observations on the distribution of the extinct Bears of Britain. 8vo. 1864.

—— Notice of early British Tumuli on the Hambleton Hills, near Thirsk. 8vo. (Leeds) 1866. THE AUTHOR.

Dieffenbach, *Ernest.* Travels in New Zealand; with contributions to the Natural History of the country. 2 vols. 8vo. London, 1843. R. KIPPIST, Libr. L.S.

Duby, *J. E.* Choix de Cryptogames exotiques, nouvelles ou mal connues. 4to. 1867. THE AUTHOR.

Duncan, *P. M.* See ACADEMIES. **London.** Palæontograph. Soc.

Eichler, *A. G.* Excursus morphologicus de Fumariaceis, Cruciferis, &c. (e Martii Fl. Brasil.). fol. THE AUTHOR.

TITLES. DONORS.

Farrer, *James,* & **Denny,** *Henry.* Further explorations in the Dowkerbottom Caves, in Craven. 8vo. Leeds.
H. DENNY, A.L.S.

Finsch, *O.,* & **Hartlaub,** *G.* Beitrag zur Fauna Central-Polynesiens. Ornithologie der Viti-, Samoa-, und Tonga-Inseln. 8vo. Halle, 1867. PURCHASED.

Flower, *T. B.* Instructions for the formation of a Wiltshire Herbarium. 8vo. THE AUTHOR.

Frauenfeld, *Georg, Ritter von.* Das Insectenleben zur See, und zur Fauna und Flora von Neu-Caledonien, &c. 8vo. Wien, 1867. THE ZOOLOG.-BOT. GESELLSCHAFT, WIEN.

Fries, *Th. M.* Lichenes Spitsbergenses. (Kongl. S. Vet. Akad. Handl.) 4to. Stockholm, 1867. Dr. MALMGREN.

Gay, *Jacques.* Histoire de l'Arenaria tetraquetra, L. (Ann. Sc. Nat.) 8vo. Paris, 1824.

—— Eryngiorum novorum vel minus cognitorum heptas. (Ibid., Sér. 3, Tome 9.) 8vo. Parisiis, 1848.

—— Sur la distribution géographique des trois espèces de la section Gamon du genre Asphodelus. (Ibid., Série 4, Tome 7.) 8vo. Paris, 1857.

—— Description d'un Lathyrus espagnol nouveau. (Ibid., Série 4, Tome 8.) 8vo.

—— Recherches sur la famille des Amaryllidacées. 1er Mém. (Ibid., Sér. 4, Tome 10.) 8vo. Paris, 1859.

—— Notice sur la vie et les travaux de P. B. Webb. (Bull. Soc. Bot. de France.) 8vo. Paris, 1856.

—— Note sur l'Aira subtriflora, Lag. (Ibid., 1858.) 8vo.

—— L'Agave Americana considéré dans ses moyens de reproduction par bourgeons souterrains. (Ibid., Tome 4.) 8vo.

—— Nouvelles observations sur la couronne des Narcissées. (Ibid., 1860.) 8vo.

—— Note sur la plante désignée sous le nom de Pyrethrum Willemoti. (Ibid., 1860.) 8vo.

—— Note sur l'Erucastrum Zanonii, J. Ball. (Ibid., 1860.) 8vo.

—— Le Chamærops excelsa, Thunb., sa patrie, le climat qui lui convient, son introduction dans l'Europe occidentale, &c. (Ibid., Tome 8.) 8vo. Paris, 1861.

—— Une excursion Botanique à l'Aubrac et au Mont-Dore, principalement pour la recherche des Isoëtes du plateau central de la France. (Ibid., Tomes 8 & 9.) 8vo. Paris, 1862.

TITLES. DONORS.

Gay, *Jacques.* Études Organographiques sur la famille des Potamées. (Comptes Rendus, Acad. Sci. Paris, Tome 38.) 4to. 1854.

—— Notice sur les travaux scientifiques de. 4to. Paris.
Dr. HOOKER, V.P.L.S. &c.

Gibson, *Alexander.* See **India.** Forest Reports.

Goeppert, *Dr.* Sur la structure de la Houille. 8vo. (Breslau.)
THE AUTHOR?

Goethe, *J. W. von.* Versuch über die Metamorphose der Pflanzen: übersetzt von Friedrich Soret. 8vo. Stuttgart, 1831.

Gray, *J. E.* Synopsis of the Species of Starfish in the British Museum. 4to. London, 1866.

—— The Lizards of Australia and New Zealand in the Collection of the British Museum. 4to. *Ibid.*, 1867. THE AUTHOR.

Günther, *A. C. L. G.*, Ed. Record of Zoological Literature (1866). Vol. 3. 8vo. London, 1867. PURCHASED.

Guérin-Méneville, *F. E.* Rapport à S. M. l'Empereur sur les travaux entrepris par ses ordres pour introduire le Ver-à-Soie de l'Aylanthe en France et en Algérie. 8vo. Paris, 1860.

—— Rapport....sur les progrès de la culture de l'Ailante, et de l'éducation du Ver-à-Soie (*Bombyx Cynthia*) que l'on élève en plein air sur ce végétal. 8vo. *Ibid.*, 1862.
Capt. LENDY, F.L.S.

Haast, *Julius.* Report on the Headwaters of the River Rakaia. fcap. fol. Christchurch, N. Z., 1867. THE AUTHOR.

Harting, *James Edmund.* Birds of Middlesex. 12mo. London, 1866. THE AUTHOR.

Hartlaub, *G.* See **Finsch,** *O.*

Henry, *Isaac H.* On pure Hybridization; or crossing Distinct species of Plants. (Farmer, Dec. 1867.) 8vo. THE AUTHOR.

Hörnes, *M.* Foss. Mollusken, &c. See ACADEMIES. **Vienna.** Geol. Reichsanstalt.

Hoffmann, *Herm.* Das Problem der thermische Vegetationsconstanten. (Heyer's Allg. Forst- and Jagd-Zeitung, 1867.) 4to. THE AUTHOR?

Hooker's Icones Plantarum. 3rd series, edited by J. D. Hooker, M.D., F.R.S., L.S. &c. Vol. 1. Parts 1 & 2. 8vo. London, 1867–68. GEORGE BENTHAM, Esq., Pres. L.S.

Hooker, *W. J.*, & **Baker,** *J. G.* Synopsis Filicum; or a Synopsis of all known Ferns; accompanied by figures representing the essential characters of each genus. 8vo. London, 1868.
R. HARDWICKE, Esq., F.L.S.

TITLES. DONORS.

Kaulfuss, *G. F.* Enumeratio Filicum quas in itinere circa terram legit cl. Adalbertus de Chamisso. 8vo. Lipsiæ, 1824.

Klotzsch, *F.* Philipp Schoenlein's botanischer Nachlass auf Cap Palmas. 4to. Berlin, 1857. D. HANBURY, Esq., F.R.S., &c.

Kotschy, *Theod.*, et **Peyritsch,** *Joan.* Plantæ Tinneanæ: s. Descriptio Plantarum in expeditione Tinneana ad flumen Bahr-el-Ghasal ejusque affluentias in septentrionali interioris Africæ parte collectarum: suis sumptibus ediderunt A. P. F. Tinne et J. A. Tinne. (Latine et Gallice.) fol. Vindobonæ, 1867.

JOHN A. TINNE, Esq.

Krempelhuber, *Aug. von.* Geschichte und Literatur der Lichenologie von den ältesten Zeiten bis zum Schlusse des J. 1865. Band 1. 8vo. München, 1867. PURCHASED.

Kuhn, *Maximilian.* Filices Africanæ. 8vo. Lipsiæ, 1868.

Lartet (*E.*) & **Christy** (*H.*). Reliquiæ Aquitanicæ. Part 5. 4to. London, 1868. EXECUTORS OF THE LATE H. CHRISTY, Esq.

Leeds, *H.* See ACADEMIES. **India.** Forest Reports.

Lees, *Edwin.* The Botany of Worcestershire. 8vo. Worcester, 1867. THE AUTHOR.

Le Maout, *Emm.*, & **Decaisne,** *Jos.* Traité général de Botanique. 4to. Paris, 1868. PURCHASED.

Lindsay, *W. L.* Contributions to New Zealand Botany. 4to. London, 1868. THE AUTHOR.

Linnæi (*Car.*). Species Plantarum. Ed. 2da. 2 tomi (in 3). 8vo. Holmiæ, 1762. (Interleaved copy, with copious notes, by Gray, the poet.) ROBERT DICKSON, M.D., F.L.S.

Linné, *Sir Charles.* General System of Nature: translated from Gmelin, Fabricius, Willdenow, &c., with a life of Linné, by William Turton, M.D. 7 vols. 8vo. London, 1806. PURCHASED.

Lovén, *S.* Phanogenia, ett hittills okändt slägte af fria Crinoideer. (Œfversigt af K. Vet. Akad. Förhandl., 1866.) 8vo. THE AUTHOR.

Malmgren, *A. J.* Om Spetsbergens Fisk-Fauna. 8vo. Stockholm, 1865. THE AUTHOR.

Markham, *C. R.* The Chinchona species of New Granada, containing the botanical descriptions of the species examined by Drs. Mutis & Carsten; with some account of those Botanists, and of the results of their labours. 8vo. London, 1867.

J. E. HOWARD, Esq., F.L.S.

	Titles.	Donors.
Martins, *Charles.*	Index Seminum Horti Montpeliensis, anno 1867. 4to.	The Author.
Martius, *C. F. P. von.*	Beiträge zur Ethnographie und Sprachenkunde Amerikas, zumal Brasiliens. 2 Bände. 8vo. Leipzig, 1867.	The Author.
Masters, *M. T.*	The genus *Cochliostema* (Gard. Chron. 1868.) 4to.	The Author.
Mettenius, *G.*	Ueber den Bau von Angiopteris. 8vo. Leipzig, 1863.	
Middendorff, *Dr. A. Th. von.*	Sibirische Reise. Band 4, Theil 1, Lief. 1–4, & Th. 2, Lief. 1. 4to.; und Karten-Atlas, obl. fol. St. Petersburg, 1859–67.	Purchased.
Milde, *J.*	Filices Europæ et Atlantidis, Asiæ Minoris et Sibiriæ. 8vo. Lipsiæ, 1867.	Purchased.
Miquel, *F. A. G.*, Ed.	Annales Musei Botanici Lugduno-Batavi. Tom. 3, Fasc. 1–5. fol. Amstelodami &c., 1867.	The University of Leyden.
——	Prolusio Floræ Japonicæ. Fasc. 6. fol. Amstelodami, 1867.	Purchased.
Miquel, *F. A. W.*	Sur les Érables du Japon. (Archives Néerland., tome 2, 1867.) 8vo.	
——	Sur le caractère et l'origine du Flore du Japon. (Ibid., 1867.) 8vo.	The Author.
Moreira, *Cons. Carvalho.*	Relatorio sobre a Exposição Internacional de 1862; apresentado a S. M. o Imperador. 4to. Londres, 1863; and Atlas, fol.	John Miers, Esq., F.R.S. & L.S.
Müller, *Johann,* & **Troschel,** *F. H.*	System der Asteriden. 4to. Braunschweig, 1842.	Purchased.
Murray, *Andrew.*	Pines and Firs of Japan. 8vo. London, 1863.	The Author.
Nave, *Johann.*	A Handy-book to the Collection and Preservation of Algæ, Diatoms, Desmids, Fungi, &c. Translated by the Rev. W. W. Spicer, M.A. 8vo. London, 1867.	The Publisher?
Neilreich, *Aug.*	Diagnosen der in Ungarn & Slavonien beobachteten Gefässpflanzen, welche in Koch's Synopsis nicht enthalten sind. 8vo. Wien, 1867.	The Zool.-Bot. Gesellsch., Wien.
Newman, *Edward.*	Illustrated Natural History of British Moths. Nos. 1–18. 8vo. London, 1867–68.	The Author.

TITLES. DONORS.

Owen, *Richard.* On the Dental Characters of Genera and Species, chiefly of Fishes, from the Low-Main Seam of Coal, Northumberland. 8vo. London, 1867. THE AUTHOR.

Pallas, *Petrus.* Zoographia Rosso-Asiatica, sistens omnium animalium in Imperio Rossico et adjacentibus maribus observatorum recensionem, &c. Voll. 3. 4to. Petropoli, 1831. PURCHASED.

Parker, *W. K.* Monograph of the Structure and Development of the Shoulder-girdle and Sternum in the Vertebrata. (Ray Soc. publ.) 4to. London, 1868. PURCHASED.

Pasquale, *Gius. Ant.* Su d'una varietà di Lycopersicum esculentum, detta volgarmente 'Pomidoro Granatino.' 4to. Napoli, 1866.

—— Proposta d'un nuovo genere di Leguminose fondato sulla Trigonella cærulea. 4to. *Ibid.*, 1866.

—— Notizie sopra alcune piante rare che si coltivano nel R. Orto Botanico di Napoli. 4to. *Ibid.*, 1866.

—— Catalogo del R. Orto Botanico di Napoli. 4to. *Ib.*, 1867.

—— Intorno la sede dell' odore della Serissa fœtida. (Rendiconto della R. Accad. d. Scienze Fisiche e Matemat. di Napoli, fasc. 2, 1867.) 4to.

—— Effetti del repentino abbassamento di temperatura avvenuto ne' giorni 25 a 29 Settembre sulle piante del R. Orto Botanico. (Ib., fasc. 10, 1867.) 4to.

—— Annotationes et descriptiones nonnullarum plantarum in Horto Neapolitano cultarum. (Ib., fasc. 1, 1868.) 4to.

—— Sulla Eterofillia. 4to. Napoli, 1867. THE AUTHOR.

Pearson, *G. F.* See ACADEMIES. **India.** Forest Reports.

Peters, *W. C. H.* Naturwissenschaftliche Reise nach Mossambique, in 1842–48. Botanik. Abth. 1 & 2. 4to. Berlin, 1862–64. PURCHASED.

Phillips, *John.* See ACADEMIES. **London.** Palæontogr. Soc.

Purchas, *Rev. W. H.* Flora of Herefordshire. See ACADEMIES. **Woolhope.**

Rathke, *Heinrich.* Untersuchungen über die Entwickelung und den Körperbau der Krokodile: herausgegeben von W. von Wittich. 4to. Braunschweig, 1866. PURCHASED.

Ratzeburg, *J. T. C.* Die Waldverderbniss. Band 2. 4to. Berlin, 1868. PURCHASED.

Rebentisch, *Joan. Frid.* Prodromus Floræ Neomarchicæ; cum præfatione C. L. Willdenow, de Vegetabilium Cryptogamicorum dispositione. 8vo. Berolini, 1804.

TITLES. DONORS.

Reeve, *Lovell.* Conchologia Iconica. Parts 264–271. 4to. London, 1867–68. PURCHASED.

Regel, *E.* Ueber die Idee der Art. (Bull. du Congrès Internat. de Bot. et d'Horticult. à Amsterdam, 1865.) 8vo.

—— Die Gattung Pleuroplitis und Andropogon productus erläutert. (Mél. Bot., tirés du Bull. Acad. Sc. de St. Pétersb., tome 5.) 8vo.

—— Index Seminum, quæ Hortus Botanicus Imp. Petropolitanus pro mutua commutatione offert, 1866. Accedunt Animadversiones Botanicæ nonnullæ. 8vo. (Petropoli, 1867.)

THE AUTHOR.

Regel, *E.*, et **Herder,** *F. ab.* Enumeratio Plantarum in regionibus Cis- et Transiliensibus a cl. Semenovio anno 1857 collectarum. 8vo. Mosquæ, 1866. HERR E. REGEL.

Richard, *Achille.* Tentamen Floræ Abyssinicæ. Vol. 1. (imperfect). 8vo. Parisiis, 1847. DR. HOOKER, V.P.L.S., &c.

Richardson, *Sir John*, & **Gray,** *J. E.* Zoology of the Erebus and Terror, in 1839–43. Fishes, Part 2; and Birds, Part 1. 4to. London, 1845. DR. GRAY, F.R.S. & L.S.

Salter, *J. W.* See ACADEMIES. **London.** Palæontogr. Soc.

Schumann, *J.* Die Diatomeen der Hohen Tatra. 8vo. Wien, 1867. THE ZOOL.-BOT. GESELLSCHAFT, WIEN.

Schweinfurth, *Georg.* Beitrag zur Flora Aethiopiens. Abth. 1. 4to. Berlin, 1867. PURCHASED.

Seringe, *N. C.* Mélanges Botaniques: ou Recueil d'observations, mémoires, et notices sur la Botanique. Vol. 1. 8vo. Berne, 1819.

—— Musée Helvétique d'Histoire Naturelle. (Partie Botanique.) Tome 1. 4to. Berne, 1823.

Smith, *J. E.*, & **Sowerby,** *James.* English Botany. 3rd edition, by J. T. Boswell Syme, Mrs. Lankester, &c. Nos. 52–62. 8vo. London, 1867–68.

The Publisher, R. HARDWICKE, Esq., F.L.S.

Snellen van Vollenhoven (*S. C.*). Essai d'une Faune Entomologique de l'Archipel Indo-Néerlandais. Monogr. 3. Fam. des Pentatomides, Pt. 1. 4to. La Haye, 1868.

THE AUTHOR?

Syme, *J. T. B.* See **Smith,** *J. E.*

Soubeiran, *J. L.* Sur l'Exposition Internationale de Produits et Engins de Pêche à Bergen, et sur la Pisciculture en Norvége. 8vo. Paris, 1866. THE AUTHOR.

TITLES. DONORS.

Soubeiran, *J. L.*, & **Delondre,** *Augustin.* De l'acclimatation des Cinchonas dans les Indes Néerlandaises et Britanniques. 8vo. Paris, 1867.

—— —— Note sur la culture des Cinchonas dans les Indes Britanniques, et sur les échantillons d'écorces de cette provenance qui se trouvent à l'Exposition de 1867. (Bull. Soc. Imp. d'Acclimat., 1867.) 8vo.

—— —— De la Pêcherie d'huitres perlières de Tinnevelly, et de la culture artificielle des huitres perlières dans la même localité. (Ibid., 1867.) 8vo.

—— —— De la Nacre, et des localités qui nous en approvisionnent. (Ibid., 1867.) 8vo. DR. SOUBEIRAN.

Stainton, *H. T.*, Ed. Entomologist's Annual for 1868. 12mo. THE EDITOR.

Stoever, *D. H.* Life of Sir Charles Linnæus,....and of his Son. Translated by Joseph Trapp, A.M. 4to. London, 1794. G. BUSK, Esq., F.R.S. &c.

Tinne, *A. P. F.*, Ed. See **Kotschy.**

Visiani, *Roberta de.* Della vita scientifica del Cav. Alberto Parolini. 8vo. Venezia, 1867. THE AUTHOR?

Watson, *J. F.* Index to the native and scientific Names of Indian and other economic Plants and Products. 8vo. London, 1868. THE AUTHOR.

Weir, *J. J.* Apterous Lepidoptera. 12mo. Greenwich, 1867. THE AUTHOR.

Welwitsch, *Dr. Friedrich.* Voyage de, éxécuté par ordre du Gouvernement Portuguais dans les Royaumes d'Angola et de Benguella. Mollusques terrestres et fluviatiles, par Arthur Morelet. 4to. Paris, 1868. DR. WELWITSCH, F.L.S. &c.

Willkomm, *Moritz.* Die mikroskopischen Feinde des Waldes. Heft 2. 8vo. Dresden, 1867. PURCHASED.

Willkomm (*M.*) & **Lange** (*J.*). Prodromus Floræ Hispanicæ. Vol. 2, pars altera. 8vo. Stuttgart, 1868. PURCHASED.

Winnertz, *Joh.* Beitrag zu einer Monographie der Sciarinen. 8vo. Wien, 1867. THE ZOOL.-BOT. GESELLSCH., WIEN.

Yates, *James.* Reasons why the Office of Warden of the Standards should include Standard Weights and Measures of the Metric System, &c. 8vo. London, 1867. THE AUTHOR.

Zanardini, *G.* Iconographia Phycologica Adriatica: ossia, Scelta di Ficée nuove o più rare del Mare Adriatico. Vol. 1 (fasc. 1–5) & 2, fasc. 1–3. 4to. Venezia, 1860–67. PURCHASED.

PROCEEDINGS

OF THE

LINNEAN SOCIETY OF LONDON.

(SESSION 1868–69.)

November 5th, 1868.

George Bentham, Esq., President, in the Chair.

W. J. Treutler, Esq., M.B., was elected a Fellow.

The following Report, on the Additions to the Library since the last meeting, was read:—

The Publications of Scientific Bodies received since the last meeting have been the following:—

(Those marked with the asterisk * contain no paper on recent Zoology or Botany.)

Russia:—

Imperial Academy of Sciences, Petersburg. Mémoires, Ser. 7, xi. n. 9 to 18; Bulletin, xii. parts 2 to 5.

Imperial Society of Naturalists, Moscow. Bulletin 1867, n. 3, 4.

Dutch Netherlands:—

Royal Academy of Sciences, Amsterdam. Transactions (Verhandelingen), 4to, xi. Reports and Communications (Verslagen en

Mededeelingen), Natural Science, Ser. 2, xi. part ii.; *Literature, xi.; *Journal (Jaarboek), 1867 (Administrative Reports, Biographies, &c.); *Minutes of Proceedings (Processen-Verbaal), May 1867 to April 1868; *Catalogue of the Library of the Academy, ii. part 2.

BELGIUM :—

Royal Botanical Society of Belgium. Bulletin, vi. n. 3, vii. n. 1.

Royal Society of Sciences, Liége. *Mémoires, Ser. 2, ii.

GERMANY :—

Royal Academy of Sciences, Berlin. Proceedings (Monatsberichte) 1868, January to July.

Royal Horticultural Society, Berlin. Weekly Journal (Wochenschrift), 1868, n. 1 to 28.

Imperial Academy Naturæ Curiosorum, Dresden. Transactions (Nova Acta), xxxiv.

Silesian Society for the Education of the Fatherland (Vaterländische Cultur), Breslau. Journal (Jahresbericht), 1867. *Memoirs (Abhandlungen), 1867–8; Index, 1804 to 1863.

Imperial Academy of Sciences, Vienna. *Proceedings (Sitzungsberichte), 1868, 15 to 20.

Imperial Geological Institute (Reichsanstalt). *Journal (Jahrbuch), xviii. n. 2.

Royal Academy of Sciences, Munich. Proceedings (Sitzungsberichte), 1868, i. parts 1 to 4.

SPAIN :—

Royal Academy of Sciences, Madrid. *Books of Astronomical Science of King Alphonso of Castile, v. part 1.

SWITZERLAND :—

Vaudois Society of Natural Sciences, Lausanne. Mémoires, ix. n. 59.

FRANCE :—

Botanical Society of France. Bulletin, xii., Session at Nice in 1865; xiv. Ordinary Session, n. 1.

Imperial Society of Acclimatization of France. Two Reports.

Imperial Academy of Sciences, Literature, and Fine Arts of Lyons. *Memoirs, xiii.

Linnean Society of Lyons. Annals, xv.

Society of Physical and Natural Sciences, Bordeaux. Memoirs, v. part 3.

EAST INDIA :—

Asiatic Society of Bengal. Journal, Natural History, xxxvi. n. 3; *Philology, xxxvi. n. 3; *Proceedings, xxxvi. n. 1 to 5.

AUSTRALIA :—

Royal Society of Victoria. *Transactions, ix. part 1.

Philosophical Society of Adelaide. Annual Report and Transactions, 1867.

SOUTH AMERICA :—

Museo Publico of Buenos Ayres. Annals, part v.

BRITAIN :—

Royal Society. Philosophical Transactions, clvii. part 2, clviii. part 1. *Proceedings, xvi. n. 103, 104.

British Association for the Advancement of Science. Report of the Dundee Meeting, 1867.

Royal Agricultural Society. Journal, Ser. 2, iv. part 2.

Society of Arts. Weekly Journal, July to October 1868.

Clinical Society of London. *Transactions, n. 1.

Entomological Society of London. Transactions, Ser. 3. iii. part 5, iv. part 4, 5, v. part 8, and 1868, part 1, 2.

Royal Geographical Society. *Journal xxxvii.; *Proceedings xii. n. 2 to 4.

Geological Society. *Quarterly Journal, xxiv. part 3.

Royal Horticultural Society. *Proceedings.

Royal Institution. Proceedings, part 3, 4.

Linnean Society of London. Transactions, xxvi. part 2; Journal, Zoology, xi. n. 41 to 43; Botany, x. n. 47.

Royal Medical and Chirurgical Society of London. Proceedings vi. n. 2.

Royal Microscopical Society. Quarterly Journal, New Ser. viii. Oct. 1868.

Palæontographical Society. Transactions, xxi. for 1867.

Pharmaceutical Society. Journal and Transactions, Ser. 2, x. n. 1 to 5.

Quekett Microscopical Club. Journal, n. 3.

Zoological Society of London. Transactions, vi. part 6, 7; Proceedings, 1868, i.

Royal Physical Society, Edinburgh. Proceedings for 1862–3.
Murray Royal Institution, Perth. *Guide to the Museum.
Northumberland and Durham Natural History Transactions, ii.
Leeds Philosophical and Literary Society. *Annual Report.

The Scientific Periodicals and Serials taken in by or presented to the Society, the current numbers of which are not specially enumerated in each successive Report of the Society's Meetings, although their contents are included in the Analyses of Papers, are the following:—

General or Mixed Natural History:—

Annals of Natural History, monthly. Presented by Dr. Francis.
Wiegmann's Archiv für Naturgeschichte. Purchased.
Popular Science Review, quarterly. Presented by the Publisher.
Murray's Journal of Travel and Natural History, every Two Months. Presented by Mr. Murray.
Journal of Microscopical Science, quarterly. Presented by the Microscopical Society.
Scientific Review. Presented by the Publishers.

Zoology:—

Siebold and Kölliker's Zeitschrift für wissenschaftliche Zoologie. Purchased.
Annales des Sciences Naturelles, Zoologie, monthly, or nearly so. Purchased.
Zoologist, monthly. Purchased.
Ibis, quarterly. Purchased.
Entomologists' Monthly Magazine, monthly. Presented by the Editors.
Entomologist, monthly. Presented by the Editor.
Journal de Conchyliologie, quarterly. Purchased.
Malacozoologische Blätter. Purchased.

Botany:—

Pringsheim's Jahrbücher für wissenschaftliche Botanik, quarterly. Purchased.
Annales des Sciences Naturelles, Botanique, monthly, or nearly so. Purchased.
Linnæa, quarterly, or nearly so. Purchased.
Seemann, Journal of Botany, monthly. Purchased.
Botanische Zeitung, weekly. Purchased.
Flora, weekly, Purchased.

HORTICULTURE :—

Illustration Horticole, monthly. Presented by the Publisher.
Gardeners' Chronicle, weekly. Purchased.

MISCELLANEOUS :—

London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science, monthly. Presented by Dr. Francis.
Geological Magazine, monthly. Presented by the Editor.
Athenæum, weekly. Presented by the Publishers.

SERIALS :—

English Botany, New Edition. Presented by the Publisher, Mr. Hardwicke.
Newman's British Moths, monthly. Presented by Mr. Newman.
Botanical Magazine, monthly. Purchased.

The papers in recent Biology (Zoology and Botany) contained in the above Transactions, Proceedings, and Journals, and the separate works added to the Library since the last Report, are as follows :—

(This analytical enumeration is now carried on, as it has been for some time past, on a rather more extended plan than was contemplated at the commencement of last Session. The whole of the excepted Publications enumerated, p. iii. of last year's Proceedings, are now included, and their contents analyzed, with the sole exception of the few journals confined either to Ornithology, Entomology, or Conchyliology, which, each time they are received, are entered only under their respective heads, without analyzing their contents. The short Memoranda on individual animals and plants observed in particular districts, contained in the Zoologist, in some of the botanical foreign periodicals, etc., are also passed over as being generally of purely local interest, and at the same time so numerous that they would have enormously extended these Reports without any corresponding advantage. Purely Medical, Agricultural, and Horticultural Papers are omitted, notwithstanding any remote connexion with Biology. Anatomical Papers are only inserted when they relate more or less to animals or Mammalia generally, and are not strictly confined to human Anatomy. Palæontological Papers have not been hitherto included, but might be conveniently added should these analytical Reports be continued beyond the present Session.)

MAMMALIA AND GENERAL ZOOLOGY :—

C. C. Abbott. On the Seals of the Falkland Islands. Proc. Zool. Soc. 1868, i.

Alix. On the papillary lines of the hand and foot, 4 plates. Ann. Sc. Nat. Zool. Ser. 5, viii., ix.

R. C. Beavan. Contributions towards a history of *Panolia Eldi*. Journ. Asiat. Soc. Bengal, Nat. Hist. xxxvi.

Van Beneden. On Whales and their geographical distribution. Ann. Sc. Nat. Zool. Ser. 5, ix. (from the Bullet. R. Acad. Belg.).

W. P. Blanford. Zoological Notes. Journ. Asiat. Soc. Bengal, Nat. Hist. xxxvi.

A. Brandt. Short remarks on the Mammoth remains found in an erect posture. Bull. Soc. Nat. Mosc. 1867.

A. Brandt, jun. Relation of the weight of the brain to that of the body in various animals. Bull. Soc. Nat. Mosc. 1867.

F. Brandt. Reply to v. Eichwald respecting the extinction of *Rhytina borealis*. Bull. Soc. Nat. Mosc. 1867.

J. F. Brandt. Note on the configuration of the brain of Sirenians, and Report on the 2nd and 3rd parts of his Sirenological Studies. Bull. Acad. Petersb. Ser. 7, xi.

G. Burmeister. On some species of *Otaria* occurring on the coasts of Buenos Ayres. Proc. R. Acad. Berlin, 1868.

——. Fauna Argentina, part 2; Mammifera pinnata. Anal. Mus. Publ. Buen. Ayr. part 5.

——. Detailed description of *Epiodon australis*, 6 plates. Anal. Mus. Publ. Buen. Ayr. part 5.

A. Carte and A. Macalister. On the anatomy of *Balænoptera rostrata*, 4 plates. Phil. Trans. R. Soc. clviii.

J. V. Carus and E. E. A. Gerstæcker. Handbook of Zoology (Handbuch der Zoologie), i. part 1. Purchased.

J. L. Clarke. Researches on the intimate structure of the brain, 7 plates. Philos. Trans. R. Soc. clviii.

H. H. Dixon. History of the rise and progress of the Hereford Cattle,—of the Leicester breed of Sheep. Journ. R. Agric. Soc. Ser. 2, iv.

P. Fischer. On a *Grampus griseus* stranded on the French coast. Ann. Sc. Nat. Zool. Ser. 5, viii.

W. H. Flower. On the development and succession of the teeth in Marsupialia, 2 plates. Philos. Trans. R. Soc. clvii.

——. On the osteology of the Cachalot, *Physeter macrocephalus*, 7 plates. Trans. Zool. Soc. vi.

W. H Flower. On the probable identity of *Balænoptera Carolinæ*, Malm and *Balænoptera hysalus Sibbaldii*, Gray. Proc. Zool. Soc. 1868.

A. Grandidier. Description of a new *Chirogalus* from the coast of Madagascar. Ann. Sc. Nat. Zool. Ser. 5, viii.; Ann. Nat. Hist. Ser. 4, ii.

J. E. Gray. Synopsis of the Suidæ of the British Museum.—Notice of *Macacus lasiotus*, a new Ape from China, 1 plate.—On the margined-tailed Otter, *Pteroneura Sandbachii*, 1 plate.—On a new Colobus and another Monkey from Zanzibar, 1 plate.—Synopsis of the Saccomyinæ.—On *Meles Chinensis*, woodcuts. Proc. Zool. Soc. 1868, i.

W. Gruber. Various anatomical papers, chiefly human. Mem. Acad. Petersb. Ser. 7, xi.

G. Krefft. Notes on Australian Zoology. Proc. Zool. Soc. 1868, i.

——. Description of a new *Thylacina*, 1 plate. Ann. Nat. Hist. Ser. 4, ii.

F. Leydig. On the organ of a sixth sense in animals, 5 plates. Nov. Act. Acad. Nat. Cur. xxxiv.

W. Macdonald. On the vertebroid homologies of the crania in Vertebralia and the analogous homologies of Articulata. Proc. R. Soc. Edinb. 1862–3.

Alph. Milne-Edwards. On some Mammalia of North China. Ann. Sc. Nat. Zool. Ser. 5, viii.; Ann. Nat. Hist. Ser. 4, ii.

St. G. Mivart. On the appendicular skeleton of the Primates, 4 plates. Philos. Trans. R. Soc. clvii.

——. On the osteology of Insectivora, woodcuts. Ann. Sc. Nat. Zool. Ser. 5, ix. (translated from Cambr. Journ. Anat. and Phys.).

J. Murie. On the morbid appearances observed in the Walrus lately living in the Zoological Society's Gardens.—On a Rat lately living in the Gardens. Proc. Zool. Soc. 1868, i.

A. Murray. A nine-tusked Elephant, woodcuts. Journ. Trav. and Nat. Hist. i.

W. H. Peters. On a new subgenus of Bats.—On the Bats belonging to the Glossophagæ.—On a new species of Coleura.—On a new genus of Rodentia, *Chiropodomys*, 1 plate. Proc. R. Acad. Berlin.

J. Reinhardt. On the Fin-whale called *Steypineyör* by the Icelanders, *Balænoptera Sibbaldii*, Gray. Ann. Nat. Hist. Ser. 4, ii. (from the Memoirs of the Copenhagen Nat. Hist. Society).

J. B. Sanderson. On the influence exercised by the movements

of respiration on the circulation of the blood, 4 plates. Philos. Trans. R. Soc. clvii.

P. L. Sclater. On *Ursus nasutus*, 1 plate.—On *Hippotragus Bakeri*, 1 plate, and woodcuts. Proc. Zool. Soc. 1868, i.

J. A. Smith. On a young Otter from Old Calabar. Proc. R. Phys. Soc. Edinb. 1862–3.

C. Voet. On the formation of Tyrosin on preserved animal organs. Zeitschr. wissensch. Zool. xviii.

ORNITHOLOGY :—

The Ibis. July 1868.

Duke of Argyle. On Mr. Wallace's theory of Birds' Nests. Journ. Trav. and Nat. Hist. i.

S. F. Baird. On a young *Cathartes californianus*, woodcuts. Proc. Zool. Soc. 1868, i.

A. D. Bartlett. Notes on the Breeding of several Birds in the Zoological Society's Gardens during 1867, 1 plate. Proc. Zool. Soc. 1868, i.

— Behn. On Owen's osteology of *Didus ineptus*, 1 plate. Leopoldina, vi.

W. T. Blanford. Zoological notes. Journ. Asiat. Soc. Bengal, Nat. Hist. xxxvi.

H. W. Fielden. Nesting of the Egyptian Vulture. Zoologist, Ser. 2, iii.

J. Gould. Two new Australian Birds.—Four new (Asiatic and South American) Birds. Proc. Zool. Soc. 1868, i.

G. Hartlaub and O. Finsch. On a collection of Birds from the Pelew Islands, 2 plates (2 communications). Proc. Zool. Soc. 1868, i.

W. Hincks. On *Cygnus Passmori*. Proc. Zool. Soc. 1868, i.

T. H. Huxley. On the animals which are most nearly intermediate between Birds and Reptiles. Proc. R. Instit. v.; Popular Science Rev. vii. (1 plate).

J. H. Kawall. Biological notes on the Crane, *Ciconia alba*. Bull. Soc. Nat. Mosc. 1867.

H. C. Milley. On a newly discovered figure of the Dodo, 1 plate. Trans. R. Acad. Amsterdam, xi.

J. Murie. On the Nocturnal Ground-Parrakeet (*Geopsittacus occidentalis*, Gould). Proc. Zool. Soc. 1868, i.

W. v. Nathusius. On the coatings which cover the yolk of birds' eggs, 5 plates. Zeitschr. wiss. Zool. xviii.

A. Newton. On a picture supposed to represent the Didine Bird of the island of Bourbon, 1 plate. Trans. Zool. Soc. vi.

A. Newton. Supplement to a report on extinct Didine Birds of the Mascarene Islands. Brit. Assoc. Rep. Dundee Meet. 1867.

E. P. Ramsay. On *Menura superba*. Proc. Zool. Soc. 1868, i.

P. L. Sclater. On *Lophophorus L'huysi*, 1 plate. Proc. Zool. Soc. 1868, i.

P. L. Sclater and O. Salvin. Descriptions of new Birds of the families Dendrocolaptidæ, Strigidæ, and Columbidæ, 1 plate.—Birds collected at Conchitos, Argentine Republic, by W. H. Hudson.—Venezuelan Birds collected by A. Goering, 1 plate.—Peruvian Birds collected by W. Whitely. Proc. Zool. Soc. 1868, i.

J. A. Smith. Ornithological notes. Proc. R. Phys. Soc. Edinb. 1862–3.

Ichthyology :—

P. Bert. On the death of Sea Fish in fresh water, second paper. Mem. Soc. Sc. Phys. Nat. Bordeaux, v.

P. Bleeker. Notes on the Ichthyological Fauna of various islands of the Eastern Archipelago and of the Mascarene group, 15 papers. Rep. and Comm. R. Acad. Sc. Amsterdam; Nat. Hist. Ser. 2, ii.

— Bocourt. New Mexican and Guatemalan Fish of the genera *Tetragonopterus* and *Centropomus* (2 articles). Ann. Sc. Nat. Zool. Ser. 5, ix.

A. Boeck. On the Rot in Herrings (Heringsasung). Wiegm. Archiv, xxxiv. (transl. from Copenhagen Journ. Fisheries).

R. Brown. On the medical and economical value of the Oulachan, *Osmerus pacificus*, Reich. From the Pharmaceutical Journal. Presented by the Author.

— Carbonnier. On the causes of the mortality of some fresh-water Fishes. Ann. Sc. Nat. Zool. Ser. 5, ix.

F. Day. On some new or imperfectly known Fishes of India, 2 articles. Proc. Zool. Soc. 1868, i.

H. Grenacker. On the anatomy of the genus *Gordius*, 2 plates. Zeitschr. wiss. Zool. xviii.

A. Günther. Account of the Fishes of Central America, based on the collections of Capt. Dow, F. Godman, and O. Salvin, 25 plates. Trans. Zool. Soc. vi.

——. Additions to British Fishes. Appendix to 4th Report on dredging among the Shetland Islands. Brit. Assoc. Rep. Dundee Meeting, 1867.

A. Hannover. On the structure and development of the scales and prickles of cartilaginous Fishes. Ann. Sc. Nat. Zool. Ser 5, ix. (from the R. Dan. Soc. Trans.).

P. Harting. Zoological, anatomical, and histological notes on *Orthragoriscus ozodura*, and on the osteology of Teleostian Fishes in general, 8 plates. Trans. R. Acad. Amsterdam, xi.

W. Houghton. The air- or swimming-bladders of Fishes. Pop. Sc. Rev. vii.

R. Kner. Rectification on his genus *Scarostoma*. Wiegm. Archiv, xxxiv.

E. v. Martens. On some E. Asiatic freshwater animals. Wiegm. Archiv, xxxiv.

P. Owsjannikow. On the central nervous system of *Amphioxus lanceolatus*, 1 plate. Bull. Acad. Imp. Petersb. xii.

W. H. Peters. Natural History Travels in Mozambique. Freshwater Fishes. 1 vol. folio, 20 plates. Presented by Dr. J. E. Gray.

——. On the *Malopterurus electricus* of Mozambique.—On a very young specimen of *Cepola rubescens*.—On the Fishes collected by F. Jagor in the Eastern Archipelago.—On some new Fishes. Proc. R. Acad. Berlin, 1868.

R. L. Playfair. On a collection of Fishes from Madagascar. Proc. Zool. Soc. 1868, i.

W. H. Ransom. On the ovum of Osseous Fishes, 4 plates. Philos. Trans. R. Soc. clvii.

— v. Siebold. On the attempt to transplant the Saibling (*Salmo Umbla*) from the Bavarian alpine Lakes to New Zealand. Proc. R. Acad. Munich, 1868, i.

Reptiles and Batrachia:—

J. E. Gray. On two new species of *Salamandra* from Central America. Ann. Nat. Hist. Ser. 4, ii.

A. Günther. On the anatomy of *Hatteria* (*Rhynchocephalus*, Owen), 3 plates. Philos. Trans. R. Soc. clvii.

C. Hasse. On the organs of hearing in Frogs. Zeitschr. wiss. Zool. xviii.

T. H. Huxley. On the animals which are most nearly intermediate between Birds and Reptiles. Proc. R. Inst. v., and Pop. Sc. Rev. vii., 1 plate.

G. Krefft. Notes on Australian Zoology. Proc. Zool. Soc. 1868, i.

— Leydig. On Cœciliæ, a contribution to the anatomy of Amphibia, 2 plates. Zeitschr. wiss. Zool. xviii.

W. H. Peters. On some new Amphibia, 1 plate. Proc. R. Acad. Berlin, 1868.

G. du Plessis and J. Combe. Fauna of the Vertebrata of the district of Orbe: Reptiles. Mem. Soc. Vaud. Sc. Nat. ix.

A. Strauch. Remarks on the genus *Scapteira*, Fritz.—On the genus *Ablepharus*. Bull. Acad. Imp. Petersb. xii.

C. A. Wilson. Notes on *Moloch horridus*. Journ. Linn. Soc. Zool. x.

MOLLUSCA :—

Malakozoologische Blätter, xv. p. 81–128.

A. Adams. New Shells from the Mauritius, 1 plate. Proc. Zool. Soc. 1868, i.

——. On the species of Cæcidæ, Corbulidæ, Volutidæ, Cancellaridæ, and Patellidæ found in Japan. Ann. Nat. Hist. Ser. 4, ii.

J. C. Cox. Monograph of Australian Landshells, 1 vol. large 8vo, 18 plates. Presented by the Author.

J. E. Gray. Note on *Pompholyx*, Lea. Ann. Nat. Hist. Ser. 4, ii.

E. T. Higgins. Six new shells, 1 plate. Proc. Zool. Soc. 1868, i.

J. G. Jeffreys. Fourth Report on Dredging among the Shetland Isles. Brit. Assoc. Rep. Dundee Meeting, 1867.

——. Last Report on Dredging among the Shetland Isles, with corrections in a subsequent article. Ann. Nat. Hist. Ser. 4, ii.

J. Lubbock. On the discovery of *Planaria terrestris* in England. Journ. Linn. Soc. Zool. x.

R. M'Andrew. Remarks upon Mr. Gwyn Jeffreys's last Dredging Report. Ann. Nat. Hist. Ser. 4, ii.

J. D. Macdonald. On the lingual dentition of Gasteropods, 1 plate. Ann. Nat. Hist. Ser. 4, ii.

F. P. Marrat. On some species of *Oliva*, 2 articles. Ann. Nat. Hist. Ser. 4, ii.

A. M. Norman. Preliminary Reports on Molluscoidea, etc., procured by the Shetland Dredging Committee in 1867. Brit. Assoc. Rep. Dundee Meeting, 1867.

L. Reeve. Conchologia Iconica, parts 272 to 275. Purchased.

J. Reineke. On the formation of prickles, etc., on the margin of the mantle of Chitons, 2 plates. Zeitsch. wiss. Zool. xviii.

L. Vaillant. On the anatomy of *Vulsella lingulata*, Lam., and *Crenatula phasianoptera*, Lam., 1 plate. Ann. Sc. Nat. Zool. Ser. 5, ix.

CRUSTACEA AND ARACHNIDA :—

R. Bergh. On *Phidiana Lynceus* and *Ismaila monstrosa*, 1 plate.

Ann. Nat. Hist. Ser. 4, ii. (from the Trans. R. Phys. Soc. Copenhagen).

G. S. Brady. Monograph of recent British Ostracoda. Trans. Linn. Soc. xxvi. 19 plates.

——. Contributions to the study of Entomostraca, 3 papers, 6 plates. Ann. Nat. Hist. Ser. 4, ii.

E. Claus. On the genus *Cynthia* as a sexual form of the genus *Siriella* of Mysideæ, 1 plate. Zeitschr. wiss. Zool. xviii.

A. Dohrn. Note on the morphology of the Arthropoda. Brit. Assoc. Rep. Dundee Meeting, 1867.

— Hesse. On new or rare Crustacea of the French coast. Ann. Sc. Nat. Zool. Ser. 5, viii. (translated in Ann. Nat. Hist. Ser. 4, ii).

J. G. Jeffreys and others. Second Report on the marine Fauna and Flora of the S. coast of Devon and Cornwall: Crustacea, 3 plates. Brit. Assoc. Rep. Dundee Meeting, 1867.

V. Lemoine. On the nervous, muscular, and glandular systems of Lobsters, 6 plates. Ann. Sc. Nat. Ser. 5, ix.

E. v. Martens. On some E. Asiatic freshwater animals, Crustacea, 1 plate. Wiegm. Archiv, xxxiv.

A. Metzger. On the male and female *Lernæa*, previously to the so called retrograde metamorphosis. Wiegm. Archiv, xxxiv.

St. G. Mivart. The Lobster, 1 plate. Pop. Sc. Rev. vii.

O. A. L. Mörch. Notice of dredging by the late H. P. C. Moller off Fair Isle. Brit. Assoc. Rep. Dundee Meeting, 1867.

A. M. Norman. On the British species of *Alpheus*, *Typton*, and *Axius*. Ann. Nat. Hist. Ser. 4, ii.

——. Preliminary Report on Crustacea, etc., procured by the Shetland Dredging Committee in 1867. Brit. Assoc. Rep. Dundee Meeting, 1867.

C. Spence Bate. Carcinological gleanings, n. 4, 3 plates. Ann. Nat. Hist. Ser. 4. ii.

— Terry. On the means employed by Spiders to connect distant points by a thread, 1 plate. Ann. Sc. Nat. Zool. Ser. 5, ix. (from the Bull. R. Acad. Brussels).

T. Thorell. On *Aranea lobata*. Ann. Nat. Hist. Ser. 4, ii. (from the Trans. R. Acad. Stockholm).

Entomology :—

Transactions of the Entomological Society, Ser. 3. iii. part 5; iv. parts 4, 5; v. part 8, 1868, parts 3, 4.

Entomologist, and Entomologists' Monthly Magazine, July to November.

A. G. Butler. Descriptions of new or little-known Lepidoptera, 1 plate. Proc. Zool. Soc. 1868, i.

— Gerhardt. On some rare or new Silesian Beetles. Journ. Siles. Soc. Vaterl. Cult. 1867.

A. Gerstaecker. Report on the scientific contributions to Entomology for the years 1865–6. Wiegm. Arch. xxxii.

——. *Psœnythia*, a new genus of Bees. Wiegm. Archiv, xxxiv.

W. Houghton. Caddis-worms and their metamorphoses, 1 plate. Pop. Sc. Rev. vii.

G. Joseph. Carniolian Insects, including a new *Lathrobium* and a new *Leptodirus*. Journ. Siles. Soc. Vaterl. Cult. 1867.

J. Künckel. On the existence of capillary arterial vessels in Insects. Ann. Nat. Hist. Ser. 4, ii. From the Comptes Rendus.

L. Landois. Anatomy of the Bug, *Cimex lectarius*, and allied Insects, 2 plates. Zeitschr. wiss. Zool. xviii.

Ch. Lespès. Anatomical researches on some blind Coleoptera, 1 plate. Ann. Sc. Nat. Zool. Ser. 5, ix.

K. Letzner. On the Silesian species of *Cryptohypnus*. Journ. Siles. Soc. Vaterl. Cult. 1867.

A. M'Lachlan. On New-Zealand trichopterous Insects. Journ. Linn. Soc. Zool. x.

P. Millière. Iconography and descriptions of unpublished Caterpillars and Lepidoptera. Ann. Soc. Linn. Lyons, xv.

E. Mulsant and A. Godart. On a new *Auletes*.—On a new *Athous*.—On 2 new Coleoptera. Ann. Soc. Linn. Lyons, xv.

E. Mulsant and — Rey. Tribe of *Scuticolla*, 3 plates.—Tribe of *Floricolæ*.—On a new Carabida (*Diachromus*). Ann. Soc. Linn. Lyons, xv.

A. Murray. List of Coleoptera from Old Calabar, 1 plate. Ann. Nat. Hist. Ser. 4, ii.

——. On an undescribed light-giving Coleopterous larva. Journ. Linn. Soc. Zool. x.

P. Owsjannikow. Contribution to the study of the light-giving organs of *Lampyris noctiluca*, 1 plate. Mem. Acad. Imp. Petersb. Ser. 7, xi.

H. Plateau. On the production of sexes in Bees. Ann. Nat. Hist. Ser. 4, ii.

A. Rivière. On the origin of Honey-Dew (*Fumago* or Morfée), the excretions of Aphides and other Insects; and E. Rose on the same subject. Bull. Soc. Bot. Fr. xiv.

E. Ruegger. Orthoptera of the valley of the Leman. Mem. Soc. Vaud. Hist. Nat. ix.

O. Salvin and F. Du Cane Godman. On some new diurnal Lepidoptera from S. America. Ann. Nat. Hist. Ser. 4, ii.

W. G. Schneider. On *Lixus myagri*, Oliv. Journ. Siles. Soc. Vaterl. Cult. 1867.

— Sichel. On the limits between species and varieties founded on the study of the genus *Polistes*. Ann. Nat. Hist. Ser. 4, ii.

— v. Siebold. On the law of development of sexes in Insects. Ann. Nat. Hist. Ser. 4, ii. (from Zeitschr. wiss. Zool.).

S. C. Snellen van Vollenhoven. Diagnoses of new Hemiptera Homoptera. Rep. and Comm. R. Acad. Amsterdam, Nat. Hist. Ser. 2. ii.

F. Walker. Catalogue of Homopterous insects collected in the Indian Archipelago by Mr. Wallace, 1 plate. Journ. Linn. Soc. Zool. x.

J. G. Waterhouse. On a species of *Xenos*. Trans. Phil. Soc. Adelaide, 1867.

Lower Animals :—

— Allman. Notes on the structure of certain hydroid *Medusæ*. Brit. Assoc. Rep. Dundee Meeting, 1867.

W. Baird. Monograph of Worms of the subclass Gephyrea, 3 plates. Proc. Zool. Soc. 1868, i.

J. V. Barboza du Bocage. On *Hyalonema boreale*. Ann. Nat. Hist. Ser. 4, ii.

J. S. Bowerbank. Observations (critical) on Dr. Gray's notes on the arrangement of Sponges. Proc. Zool. Soc. 1868, i.

R. Brown. On the nature of the discoloration of the Arctic Seas. Journ. Microsc. Sc. new Ser. viii.

E. Claparède. On a new genus of Gastrotrichous Rotatoria. Ann. Nat. Hist. Ser. 4, ii. (from the Ann. Sc. Nat.).

J. Feuereisen. Contributions to the study of *Tænia*, 1 plate. Zeitschr. wiss. Zool. xviii.

G. W. Focke. On shelless freshwater Radiolariæ, 1 plate. Zeitschr. wiss. Zool. xviii.

J. E. Gray. On a new Japanese Coral and on *Hyalonema*.—On a new free form of *Hyalonema boreale*.—On *Hyalonema Schultzii*, Semper (woodcut). Ann. Nat. Hist. Ser. 4, ii.

— Grube. On a viviparous Sea-urchin. Proc. R. Acad. Berlin (transl. Ann. Nat. Hist. Ser. 4, ii.).

——. On various Echinoderms, Annelids, and other lower animals. Journ. Siles. Soc. Vaterl. Cult. 1867.

T. H. Huxley. On some organisms living at great depths in the N. Atlantic Ocean, 1 plate. Journ. Microsc. Sc. new Ser. viii.

J. E. Jeffreys and others. Second Report on the marine Fauna

and Flora of the S. coast of Devon. Brit. Assoc. Rep. Dundee Meeting, 1867.

W. Keferstein. On *Borlasia hermaphroditica* from St. Malo, 1 plate. Wiegm. Archiv, xxxiv.

J. Knoch. On the existence of *Cysticercus Tæniæ medio-canellatæ* in the muscles of bovine animals, 1 plate. Bull. Acad. Imp. Petersb. xii.

— Lortet. On the origin of *Leucocytes*. Ann. Sc. Nat. Ser. 5, ix.

S. Lovén. A remarkable Sponge from the North Sea. Wiegm. Archiv, xxxiv., 1 plate; and Ann. Nat. Hist. Ser. 4, ii., 1 plate. (Both from Trans. R. Acad. Stockholm.)

W. C. M'Intosh. On the Annelids of St. Andrews. Brit. Assoc. Rep. Dundee Meeting, 1867.

——. Report on the Annelids dredged off the Shetland Islands by Mr. Gwyn Jeffreys in 1867.—On the boring of certain Annelids, 3 plates. Ann. Nat. Hist. Ser. 4, ii.

S. J. M'Intyre. On *Podurœ*, 1 plate. Journ. Quek. Microsc. Club, i.

W. R. M'Nass. On *Ophrydium versatile*. Proc. R. Phys. Soc. Edinb. 1862–3.

——. On *Hyalonema Schultzii* and on *Eurete*. (From the same.)

E. v. Martens. On *Spongilla vesparum*, 1 plate. Wiegm. Archiv, xxxiv.

O. A. L. Mörch. Notice of dredging by the late H. P. C. Möller, off Fair Isle. Brit. Assoc. Rep. Dundee Meeting, 1867.

J. Murie. A new species of *Ascaris* found in the stomach of a Walrus. Proc. Zool. Soc. 1868, i.

H. A. Nicholson. On the nature and systematic position of Graptolitidæ. Brit. Assoc. Rep. Dundee Meeting, 1867.

A. M. Norman. Notes on some rare British Polyzoa, with descriptions of new species, 3 plates. Journ. Microsc. Sc. new Ser. viii.

——. Preliminary Report on Echinodermata, Cœlenterata, and other animals procured by the Shetland Dredging Committee in 1867. Brit. Assoc. Rep. Dundee Meeting, 1867.

C. W. Peach. On the naked-eyed *Medusæ* found at Peterhead and Wick. Brit. Assoc. Rep. Dundee Meeting, 1867.

——. On the occurrence of *Comatula rosea* on the east shores of Scotland. Proc. R. Phys. Soc. Edinburgh, 1862–3.

G. du Plessis. On a new instance of revivification of Infusoria and Helminths after six months' desiccation. Mem. Soc. Vaud. Hist. Nat. ix.

C. Semper. On *Euplectella Aspergillum* (from Wiegm. Archiv).—On a new class of Echinodermata (from Trans. Phys. Med. Soc. Würzburg). Ann. Nat. Hist. Ser. 4, ii.

——. On *Ophiocrinus*, a new genus of Comatulidæ. Wiegm. Archiv, xxxiv. (translated in Ann. Nat. Hist. Ser. 4, ii.).

L. Vaillant. Note on the anatomy of *Pontobdella verrucata*. Ann. Nat. Hist. Ser. 4, ii. (from the Comptes Rendus).

E. Waller. Report on Foraminifera obtained in the Shetland Seas. Brit. Assoc. Rep. Dundee Meeting, 1867.

T. S. Wright. Observations on British Zoophytes, 1 plate. Proc. R. Phys. Soc. Edinburgh, 1862–3.

Phænogamic Botany :—

J. H. Balfour. Notice of rare plants recently collected in Scotland. Brit. Assoc. Rep. Dundee Meeting, 1867.

D. A. van Bastelaer. On some species of *Rumex* of the section *Lapathum*. Bull. Soc. R. Bot. Belg. vi.

G. Bennett. On *Tanghinia veneniflua*. Seem. Journ. Bot. vi.

T. R. A. Briggs. Notes on some Plymouth plants. Seem. Journ. Bot. vi.

R. Brown. Monograph of *Thuja* (from Trans. Bot. Soc. Edinb.). Presented by the Author.

A. Bunge. *Astragali* species Gerontogei, part 1. Mem. Acad. Imp. Petersb. Ser. 7, xi.

De Candolle. Prodromus Systematis naturalis Vegetabilium, xvi. sect. 2, part 2 (Coniferæ, Salicinæ, and small orders). Purchased.

— Caruel. Observations on the ovules (gemmules) of *Anemone*. Bull. Soc. Bot. Fr. xii.

A. Coigneaux. Notes on Belgian Plants. Bull. Soc. R. Bot. Belg. vi.

F. Crépin. Revision of the Herbarium of Gramineæ, Cyperaceæ, and Junceæ, published by P. Michel. Bull. Soc. R. Bot. Belg. vi.

D. Dumortier. Monograph of the genus *Pulmonaria*.—On the staminodia of Belgian Scrophularias.—On the genus *Michelaria*, and the classification of Gramineæ. Bull. Soc. R. Bot. Belg. vii.

A. G. Eichler. Brasilian Oleaceæ and Jasmineæ, 3 plates; Brasilian Loranthaceæ, 44 plates. Mart. Fl. Bras.

——. *Lathrophytum*, a new genus of Balanophoreæ from Brazil, 1 plate. Bot. Zeit. 1868.

E. Engelmann. On the generic characters of Abietineæ. Bot. Zeit. 1868.

T. B. Flower. Flora of Wiltshire, continuation. Presented by the Author.

G. S. Gibson. *Potentilla norvegica* in England. Seem. Journ. Bot. vi.

H. R. Göppert. Sketches of the history of the primitive forests of Silesia and Bohemia, 9 plates. Nov. Act. Acad. Nat. Cur. xxxiv.

L. Gruner. Enumeration of the plants collected by Prof. R. Bruhns on the Swatoi Island and Apscheron Peninsula (Baku), 2 plates. Bull. Soc. Imp. Nat. Moscow, 1867.

H. F. Hance. Description of a new Chinese Larkspur.—On *Commelyna tuberosa*, Lour.—On the genus *Henslowia*, Blume.—A second decade of Chinese plants. Seem. Journ. Bot. vi.

J. H. Hasskarl. Key to the Hortus Malabaricus of Rheede. Nov. Act. Acad. Nat. Cur. xxxiv.

P. J. Hellbom. Report on a botanical journey in Norway. Flora, 1868.

W. B. Hemsley. Notes on the Flora of Sussex. Seem. Journ. Bot. vi.

W. P. Hiern. *Aster salignus* in Cambridgeshire. Brit. Assoc. Rep. Dundee Meeting, 1867.

T. Irmisch. On *Ranunculus Ficaria* and *Gagea arvensis*. Bot. Zeit. 1868.

G. A. v. Jacobi. Sketch of a systematic arrangement of Agaveæ. Journ. Siles. Soc. Vaterl. Cult. 1867.

C. Koch. Description of two new Bromeliaceæ; of *Tillandsia argentea*. Journ. (Wochenschr.) R. Hort. Soc. Berlin.

W. Lauder-Lindsay. Notes on some plants of Otago, New Zealand. Seem. Journ. Bot. vi.

E. Lefranc. On the black Chameleon and white Chameleon of the ancient Greeks (*Atractylis gummifer*, *Cardopatium orientale*, and *C. Boryi*). Bull. Soc. Bot. Fr. xiv.

E. Lindemann. Florula Elizabethgradensis (continued). Bull. Soc. Imp. Nat. Mosc. 1867.

Loddige's Botanical Cabinet, 20 vols., 2000 plates. Purchased.

C. J. Maximowicz. Diagnoses of Mantchurean and Japanese plants, 6th decade. Bull. Acad. Imp. Petrop. xii.

J. Miers. On Tricuspidaricæ, a subtribe of Eleæocarpeæ.—On Heliotropieæ, 2 articles. Ann. Nat. Hist. Ser. 4, ii.

F. A. G. Miquel. New Observations on the Palms of the Eastern Archipelago, 1 plate. Trans. R. Acad. Amsterdam, xi.

——. On the Piperaceæ of New Holland.—On the connexion

of the Flora of Japan with that of Asia and N. America, and descriptions of new Japanese plants. Rep. and Comm. R. Acad. Amsterdam, Nat. Hist. Ser. 2, ii.

A. G. More. Short Notes on Irish Plants. Seem. Journ. Bot. vi.

J. G. Baker and G. R. Tate. Northumberland and Durham Flora. Nat. Hist. Trans. North. and Durh. ii.

D. Oliver and others. Flora of Tropical Africa, i. Presented by the Board of Works.

A. Ostroviky. List of Plants of the Government of Kostroma. Bull. Soc. Imp. Nat. Mosc. 1867.

C. A. J. Oudemans. Critical Notes on some Javan Cupuliferæ, 12 plates. Trans. R. Acad. Amsterdam, xi.

——. On *Cycas inermis* and *C. revoluta*, 3 plates. Rep. and Comm. R. Acad. Amsterdam, Nat. Hist. Ser. 2, ii.

T. Powell. On various Samoan Plants and their vernacular names. Seem. Journ. Bot. vi.

A. Progel. Brasilian Loganiaceæ, 6 plates. Mart. Fl. Bras.

V. Reboud. Note on the Djedari, *Rhus oxyacanthoides*. Bull. Soc. Bot. Fr. xiv.

E. Regel and J. v. Herder. Enumeration of Semenov's cis- and trans-Ilian Plants (continued), 1 plate. Bull. Soc. Imp. Nat. Mosc. 1867.

P. Rohrbach. Conspectus systematicus specierum generis *Silenes*. Ann. Sc. Nat. Bot. Ser. 5, viii.

T. A. Schmidt. Enumeration of Schlagintweit's Labiatæ and Scrophularineæ from Upper Asia, 1 plate. Seem. Journ. Bot. vi.

F. Schultz. *Carex Pairæi*, a new species separated from *C. muricata*. Flora, 1868.

G. Schweinfurth. Sketches of the geography of the Plants of the region of the Nile and Red Sea (from Petermann's Mittheilungen). Presented by the Author.

B. Seemann. Two new genera of Smilacineæ, 2 plates. Seem. Journ. Bot. vi.

M. Seubert. Brazilian Styraceæ, 5 plates. Mart. Fl. Bras.

A. Thielens. On *Cytisus decumbens*, Walp., new to the Belgian Flora.—On *Myosotis Dumortieri* and on a few critical plants. Bull. R. Soc. Bot. Belg. vii.

E. R. Trautvetter. Enumeration of Schrenck's Songarian plants (continued). Bull. Soc. Imp. Nat. Mosc. 1867.

Walpers's Annales Botanices Systematicæ, vii. part 1, and the old volumes completed. Purchased.

H. C. Watson. *Chenopodium album* and its varieties. Seem. Journ. Bot. vi.

E. P. Wright. Notes on *Lodoicea Sechellarum*, Labill. Ann. Nat. Hist. Ser. 4, ii.

PHYSIOLOGICAL, MISCELLANEOUS, AND APPLIED BOTANY:—

P. Ascherson. The Nomenclature question before the Paris Congress. Bot. Zeit. 1868.

J. Boehm. On the gases disengaged by dead plants, 1 plate. Ann. Sc. Nat. Bot. Ser. 5, viii.

E. Borscow. On the action of protoxide of azote on plants. Bull. Acad. Imp. Petersb. xii.

R. Brown. On vegetable products used by the N. W. American Indians as food, medicine, in the arts and superstitious rites. Journ. Pharmac. Soc. Ser. 2, x.

J. Chalon. Botanical notes, chiefly physiological. Bull. Soc. R. Bot. Belg. vi.

D. Clos. On postfoliation. Bull. Soc. Bot. Fr. xiv.

— Corenwinder. Studies on the functions of the roots of plants. Ann. Sc. Nat. Bot. Ser. 5, ix. (from the Mem. Soc. Imp. Sc. Lille).

E. Dardenne. Notes on two monstrous Plantagos. Bull. Soc. R. Bot. Belg. vi.

C. Darwin. On the character and hybrid-like nature of the offspring of illegitimate unions of dimorphic and trimorphic plants.—On *Primula veris*, *P. vulgaris*, and *P. elatior*, and on hybrid *Verbascums*. Journ. Linn. Soc. Bot. x.

Duchartre. Report on the progress of Physiological Botany. 1 vol. 8vo. Presented by the Author.

J. Duval-Jouve. On the stinging hairs of Nettles, 1 plate. Bull. Soc. Bot. Fr. xiv.

A. Famintzin and J. Borodin. On the transitory formation of Starch in the Birch. Bull. Acad. Imp. Petersb. Ser. 7, xii.; also in Ann. Sc. Nat. Bot. Ser. 5, viii.

T. H. Farrer. On the manner of fertilization of the Scarlet Runner and the blue Lobelia. Ann. Nat. Hist. Ser. 4, ii.

B. Frank. On Hofmeister's objections to the doctrine of Geotropismus in plants. Bot. Zeit. 1868.

K. W. van Gorkom. Report on the cultivation of *Cinchona* in Java in 1867. Flora, 1868.

J. Groenland. On heteromorphous hairs in certain plants. Bull. Soc. Bot. Fr. xiv.

A. Guillard. On the movement and special site of the sap in plants, 2 papers. Bull. Soc. Bot. Fr. xiv.

——. On the distinctive characters of families of plants taken from their internal organization (from the Adansonia). Presented by the Author.

— Guiraud. On the flowering of *Colocasia esculenta* in the open air, and on the secretion and ejection of water from its leaves. Bull. Soc. Bot. Fr. xiv.

G. Gulliver. Plants known by their Pollen-grains and other cells. Pop. Sc. Rev. vii.

— Hardy. On the cultivation of Cinchona in Algeria (from Bull. Soc. Imp. Acclim.). Presented by M. Soubeiran.

W. B. Hemsley. On the vegetable productions of Abyssinia. Journ. of Travel, No. 5.

G. G. Holzner. On the physiological importance of Oxalate of Lime in plants. Additional note. Bot. Zeit. 1868.

E. Lechartier. On the movement of gas in aquatic plants. Ann. Sc. Nat. Bot. Ser. 5, viii.

H. Leeds. Progress Reports on Forest administration in British Burmah and Province of Oudh, 1866-7. Presented by the India Office.

M. T. Masters. The life of a Seed, 1 plate. Pop. Sc. Rev. vii.

N. C. Mueller. Researches on the diffusion of atmospheric gases in plants, 1 plate. Pringsh. Jahrb. vi.

E. Peligot. On the repartition of potassium and soda in plants. Ann. Sc. Nat. Bot. Ser. 5, viii.

A. Pollender. Is the priority in the anatomy of plants due to Grew or to Malpighi?—The origin and formation of the circular opening in the epidermis of the pollen of Cucurbitaceæ and Onagrarieæ. Pamphlets presented by the Author.

N. W. P. Rauwenhoff. Observations on the growth of the stem in plants by day and by night. Rep. and Comm. R. Acad. Sc. Amsterdam, Nat. Hist. Ser. 2, ii.

G. de Saint-Pierre. On true hermaphroditism in phænogamic plants, and teratological observations on the staminal and carpellary leaves of *Salix*. Bull. Soc. Bot. Fr. xii.

J. de Saldanha da Gama. On the Brazilian woods of the Exhibition of 1867. Bull. Soc. Bot. Fr. xiv.

A. Sauter. On the migration of plants. Flora, 1868.

C. F. Schönbein. Contributions to Vegetable Chemistry. Bot. Zeit. 1868.

— Schultz-Schultenstein. On laticiferous vessels; and A. Trécul in reply. Ann. Sc. Nat. Bot. Ser. 5, viii.

J. Scott. On the reproductive functional relations of several species and varieties of *Verbascum*. Proc. Asiat. Soc. Bengal, Nat. Hist. xxxvi.

H. Solms-Laubach. On the structure and development of the organs of nutrition in phænogamous plants, 8 plates. Pringsh. Jahrb. vi.

J. L. Soubeiran. Report on the cultivation of the Tokay Vine in France. Presented by the Imp. Soc. of Acclimatization of France.

J. L. Soubeiran and A. Delondre. On the introduction and acclimatization of Cinchonas in Dutch and British India. Presented by the Imp. Soc. of Acclimatization of France.

— Tiran. On the Orange-tree disease in Valencia. Bull. Soc. Bot. Fr. xii.

A. Trécul. On the vessels and Tannin in Musaceæ. Ann. Sc. Nat. Bot. Ser. 5, viii.

H. C. Van-Hall. On the extinction and production of species in the vegetable kingdom. Rep. and Comm. R. Acad. Sc. Amsterdam; Nat. Hist. Ser. 2, ii.

— Vogel. Remarks on the relation of infusorial soil to vegetation. Proc. R. Acad. Sc. Munich, 1868, i.

Cryptogamic Botany:—

F. Arnold. Lichenes Lusitanici. Flora, 1868.

J. Baranetzky. Biological observations on the gonidia of Lichens. Bull. Acad. Imp. Petersb. xii.

J. Borodin. On the action of light on some Cryptogams. Bull. Acad. Imp. Petersb. xii.

R. Brown. On the nature of the discoloration of the Arctic Seas. Journ. Microsc. Sc. New Ser. viii.

A. F. Castracane degli Antelminelli. On the multiplication and reproduction of Diatomaceæ. Ann. Sc. Nat. Bot. Ser. 5, viii.; and Journ. Microsc. Sc. New Ser. viii. (from Trans. Pontif. Accad. de' Nuovi Lincei at Rome).

— Cohn. On Hallier's Cholera-Fungus. Journ. Siles. Soc. Vaterl. Cult. 1867.

T. Edlich. On the formation of the Frond in Ferns, 3 plates. Nov. Act. Acad. Nat. Cur. xxxiv.

A. M. Edwards. On the occurrence of living forms in the hot waters of California. Journ. Microsc. Sc. New Ser. viii.

A. Famintzin. On the action of light on *Spirogyra*. Bull. Acad. Imp. Petersb. xii.

A. Famintzin and J. Baranetzky. History of the development of Gonidia and the formation of Zoospores in Lichens, 1 plate. Mem. Acad. Imp. Petersb. Ser. 7, xi.

J. Fraser. *Amblystegium confervoides*, a moss new to Britain. Brit. Assoc. Rep. Dundee Meeting, 1867.

W. Fuisting. On the development of Pyrenomycetæ, 1 plate. Bot. Zeit. 1868.

E. Hallier. Mycological Researches, 1 plate. Flora, 1868.

F. Hildebrandt. Mycological notes. Ann. Sc. Nat. Bot. Ser. 5, viii., 3 plates (from Pringsh. Jahrb.).

A. v. Krempelhuber. Prodromus Lichenographiæ insulæ Maderæ. Flora, 1868.

M. Kuhn. Notes on some Chinese Ferns. Seem. Journ. Bot. vi.

W. Lauder-Lindsay. Various notes on Lichen-growth. Brit. Assoc. Rep. Dundee Meeting, 1867.

W. A. Leighton. Notulæ Lichenologicæ (continued). Ann. Nat. Hist. Ser. 4, ii.

— Leitgeb. Two new Saprolegnieæ. Bot. Zeit. 1868.

E. Loew. On *Dematium pullulans*, De Bary. Pringsh. Jahrb. vi.

P. G. Lorentz. On the anatomy of *Bartramia ithyphylla* and *Philonotis cæspitosa*, 1 plate. Bot. Zeit. 1868.

——. Contributions to the Moss-flora of Pinzgau. Flora, 1868.

J. Milde. On a new Jungermannia and on the Moss-flora of Silesia. Journ. Siles. Soc. Vaterl. Cult. 1867.

——. On *Aspidium Nevadense*, Boiss.—Filices creticæ.—On *Asplenium adulterinum*. Bot. Zeit. 1868.

W. Nylander. Notes on the gonimical evolution of Collemaceæ.—On the evolution of the germinal spores of Varicellarieæ. Flora, 1868.

L. Piré. The *Sphagnums* of the Belgian Flora, 1 plate. Bull. Soc. R. Bot. Belg. vi.

——. Revision of some genera of Belgian Pleurocarpic Mosses. Bull. Soc. R. Bot. Belg. vii.

E. Roze. On Honey-dew and on the accompanying Fungus described as a genus, *Morfea*. Bull. Soc. Bot. Fr. xii.

S. de Salve. On the *Isoetes* of the Eastern Pyrenees. Bull. Soc. Bot. Fr. xii.

W. G. Schneider. On Hallier's Cholera-Fungus, and its development. Journ. Siles. Soc. Vaterl. Cult. 1867.

J. Scott. On the higher Cryptogams cultivated in the Botanical Garden of Calcutta (from the Journ. Agri. Hort. Soc. India). Presented by the Author.

W. G. Smith. *Boletus fragrans*, Vitt., a new British Fungus, 1 plate. Seem. Journ. Bot. vi.

E. Stitzenberger. Monograph of *Lecidea sabuletorum*, Flörke, and allied Lichens, 3 plates. Nov. Act. Nat. Cur. xxxiv.

W. F. R. Suringar. On the differences in the chlorophyll stripes in *Spirogyra lineata*, and descriptions of new Japanese Algæ. Rep. and Comm. R. Acad. Amsterdam, Nat. Hist. Ser. 2, ii.

J. Waitz. On the formation of Zoospores in Algæ. Bot. Zeit. 1868.

H. C. Wood, jun. Notes on some Algæ in a Californian hot spring. Journ. Microsc. Sc. new Ser. viii.; and Ann. Nat. Hist. Ser. 4, ii. (from Sillim. Journ.).

MISCELLANEOUS:—

H. R. Göppert. On the origin of Amber. Journ. Siles. Soc. Vaterl. Cult. 1867.

J. D. Hooker. Himalayan Journals, 2 vols. 8vo. Purchased.

L. Jenyns. Observations in Natural History. Presented by the Author.

E. Lartet and H. Christy. Reliquiæ Aquitanicæ, parts 6, 7. Presented by the executors of the late H. Christy.

E. Newman. On the death of Species. Zoologist, Ser. 2, iii.

Principles of Organic Life. Presented by the Publisher, Mr. Hardwicke.

J. Shortt. Account of the tribes on the Neilgherries. Presented by the Author.

M. Wagner. On the Darwinian theory in relation to the geographical distribution of Organisms. Proc. R. Acad. Munich, 1868, i.; also a separate copy presented by the Author.

E. J. Waring. The Pharmacopœia of India. Presented by the Pharmacopœia-of-India Company.

An extensive and valuable series of specimens of Gum Copal from Eastern Africa, including some with Insects imbedded, was exhibited by Dr. Hooker, V.P.L.S., on the part of Dr. Kirk, who had re-

ferred to them in his paper "On the Copals of Zanzibar," read at the last Meeting.

Mr. W. G. Smith, F.L.S., exhibited specimens of two new British Hymenomycetous Fungi, *Hydnum nigrum* and *Lactarius controversus*.

Mr. Redhead, F.L.S., exhibited a specimen in fruit of *Culcita macrocarpa*, Presl. found in May last (as he believed, for the first time on the mainland of Europe), by Mr. W. Glassford, at Algeceiras, near Gibraltar.

Mr. Busk, Sec. L.S., exhibited, on the part of Sir R. I. Murchison, Bart., a specimen of a sort of silky web, found lining the inner surface of the hatches of the steamer 'Onward,' which had brought a cargo of Indian corn from Trieste to London. Various suggestions were offered as to the Insect by which this substance had been produced; and Mr. Stainton thought it not improbable that it might have been the work of *Tinea granella*.

The following papers were read:—

1. "Characters of a new Genus, consisting of two Species, of parasitic *Gentianeæ*," by Asa Gray, M.D., F.M.L.S., &c.

2. "On the Natural History and Hunting of the Beaver (*Castor canadensis*, Kuhl) on the Pacific slope of the Rocky Mountains," by Ashdown H. Green, Esq.; with supplementary notes by Robert Brown, F.R.G.S. Communicated by James Murie, M.D., F.L.S.

3. A letter from the Rev. Leonard Jenyns, F.L.S., referring to the note by Sir John Lubbock, in No. 43 of the Society's Journal, "On the discovery of *Planaria terrestris* in England," and calling attention to the fact that he had himself, in his "Observations in Natural History," published in 1866, described the same animal, under the name of "Ground Fluke," as common in damp woods in Cambridgeshire, and expressed his belief of its identity with the *Fasciola terrestris* of Müller. Mr. Jenyns further stated that the animal also occurs in woods about Bath, where many specimens had been collected during last summer.

November 19th, 1868.

George Bentham, Esq., President, in the Chair.

Dr. Arthur Ellson Davies and the Rev. John Ewbank Leefe were elected Fellows.

Daniel Hanbury, Esq., F.R.S. & L.S., exhibited branches, in fruit, of *Zanthoxylum alatum*, Roxb., taken from the female (non-staminiferous) tree, described in the Journal of the Linnean Society, vol. vii. Botany, p. 171.

The following papers were read:—

1. "Notes on the Structure and Affinities of *Parnassia palustris*, L.," by Alfred W. Bennett, M.A., F.L.S.

2. "Notes on the Stamens of Saxifrages," by Mr. Duncan. Communicated by J. G. Baker, Esq., F.L.S.

3. "On some Species of the Genus *Agaricus* from Ceylon," by the Rev. M. J. Berkeley, M.A., F.L.S., and C. E. Broome, Esq., F.L.S.

4. "Notes on a Collection of Plants from the North-east Shore of Lancaster Sound," by George Dickie, M.D., F.L.S.

5. "Experiments to determine the Value of Chemical Reaction as a Specific Character in Lichens," by W. Lauder Lindsay, M.D., F.L.S., &c.

December 3rd, 1868.

George Bentham, Esq., President, in the Chair.

Charles Brady, Esq., was elected a Fellow.

Dr. Prior, F.L.S., exhibited specimens of Oak and Yew, portions of two large trees from the submarine forest opposite Stogursey. The forest, which is only visible at low water, extends along the Bristol Channel for many miles.

Dr. Prior also exhibited a piece of the Cornish Elm, which he believes to be a distinct species, differing in the character of the wood, and still more in the habit, from the common Elm.

The following papers were read:—

1. "On the Anatomy of the Genus *Appendicularia*, with the Description of a new Form occurring off the Coast of Portugal," by E. L. Moss, M.D., Assist. Surg. R.N. Communicated by Professor Huxley, F.R. & L.S.

2. "Note on some photographed Wasps' Nests," by John Hogg, Esq., M.A., F.L.S.

3. "Descriptions of 10 new Species of *Paracupta*, Deyr., and 10 new Species of *Conognatha*, Esch.," by Edward Saunders, Esq. Communicated by W. W. Saunders, Esq., V.P.L.S.

4. "Characters of some undescribed Heterocerous Lepidoptera in the Collection of T. Norris. Esq.,' by F. Walker, Esq., F.L.S.

5. "Characters of Australian Heterocerous Lepidoptera in the National Museum, Melbourne," by the same.

6. "Descriptions of Heterocerous Lepidoptera from Cabenda, West Africa," by the same.

December 17th, 1868.

George Bentham, Esq., President, in the Chair.

William Carr, Esq., M.D., was elected a Fellow.

Dr. Prior, F.L.S., exhibited a piece of Oak from a fen in the parish of Halse, near Taunton; and, for the sake of comparison, a specimen of Oak obtained from the submarine forest on the N.W. coast of Somerset, opposite Stogursey.

Mr. A. G. More, F.L.S., exhibited specimens, found by him at Arklow, Ireland, in August last, of *Scirpus parvulus*, a species originally discovered by the Rev. Gerard E. Smith, at Lymington, Hants, but which Mr. More believed had not been met with, in England, for the last thirty years.

Mr. Collins exhibited specimens of rope made from the fibre of *Adansonia digitata*.

The following paper was read:—

"On the geographical Origin and Relations of the chief Coleopterous Faunæ," by Andrew Murray, Esq., F.L.S.

January 21st, 1869.

George Bentham, Esq., President, in the Chair.

Dr. Ralph Fawcett Ainsworth; Thomas Henry Farrer, Esq.; Marmaduke Alexander Lawson, Esq., M.A.; John Traherne Moggridge, Esq.; Hildebrand Ramsden, Esq., M.A.; Samuel Saywell, Esq.; Frederic Stratton, Esq.; Shepherd T. Taylor, M.D.; John Hewitt Wheatley, Esq.; and Henry S. Worsley-Benison, Esq., were elected Fellows.

Dr. Masters, F.L.S., exhibited a spray of Holly with orange-coloured berries, on a scion of a yellow-fruited variety grafted on a red-berried stock, from Mr. D. T. Fish, Hardwicke, Bury St. Edmunds.

The following papers were read:—

1. "Palmæ Amazonicæ: sive Enumeratio Palmarum in itinere suo per regiones Americæ æquatoriales lectarum," auctore Ricardo Spruce, Ph.D. Communicated by the President.

2. "The Lichens of Ceylon, collected by Dr. Thwaites, F.R.S. & L.S., Director of the Royal Botanic Garden, Peradenia, Ceylon," examined and determined by the Rev. W. A. Leighton, B.A., F.L.S.

3. "Notes on the Lichens of the Island of St. Helena," by the same.

4. "On *Sphæria tartaricola*, a new British Fungus," by the same.

The Publications of Scientific Bodies received since the last Report (above, p. i) have been the following:—

Sweden:—

Royal Society of Sciences of Upsala. Transactions (Nova Acta), Ser. 3, vi. part 2.

Dutch Netherlands:—

Botanical Museum of Leyden. Annales, completion of vol. iii.

Netherlands Entomological Society. Journal (Tijdschrift voor Entomologie), Ser. 2, iii. parts 2 to 6, iv. part 1.

Germany:—

Entomological Society of Stettin. Journal (Zeitschrift), 29th year, 1868, n. 1 to 12.

Royal Academy of Sciences, Berlin. Proceedings (Monatsbericht) 1868, August to October.

Imperial Academy of Sciences, Vienna. *Proceedings (Sitzungsberichte) 1868, n. 23 to 29.

Royal Academy of Sciences, Munich. Proceedings (Sitzungsberichte) 1861, i. part 4, and ii. part 1.

Physico-Medical Society of Würzburg. Transactions (Verhandlungen), New Series, i. part 2.

SWITZERLAND:—

Physical and Natural History Society of Geneva. Memoirs, xix. part 2.

FRANCE:—

Museum of Natural History, Paris. Nouvelles Archives iii. iv.

ITALY:—

Royal Academy of Sciences, Turin. Memoirs (Memorie), Physical and Mathematical Sciences, Ser. 2, xxiv. Transactions (Atti) iii. parts 1 to 8.

EAST INDIA:—

Asiatic Society of Bengal. Proceedings 1868, n. 6 to 8; Journal, Physical Science 1868, n. 1 to 3, and extra n.; *History, Literature, &c. 1868, n. 1.

AUSTRALIA:—

Acclimatization Society, New South Wales. Annual Report.

NORTH AMERICA:—

Smithsonian Institution, Washington. *Contributions xv., and Annual Report of the Board of Regents for 1866.

American Philosophical Society, Philadelphia. Proceedings x. n. 77.

American Entomological Society, Philadelphia. Transactions i.; Proceedings vi. n. 2; Practical Entomologist ii. n. 3 to 12.

American Academy of Arts and Sciences, Boston. Memoirs, New Ser. ix. part 1; Proceedings vii., Sept. 1866 to June 1867.

Boeton Society of Natural History. Memoirs i. part 3; Proceedings, completion of xi.; *Condition and Doings, May 1867, May 1868; *Annual, 1868–69.

Museum of Comparative Zoology, Boston. Bulletin n. 5, 6; *Annual Report of Trustees, 1866, 1867.

Lyceum of Natural History, New York. Annals viii. n. 15 to 17.

Essex Institute of Salem. Proceedings v. n. 5, 6; American Naturalist ii. n. 1 to 3.

Academy of Science, St. Louis. Transactions ii. n. 3.

Academy of Sciences, Chicago. Transactions i. part 1.

Canadian Institute. Canadian Journal of Science, Literature, and History xii. n. 1.

Natural History Society, Montreal. Canadian Naturalist and Geologist, New Ser. iii. n. 3, 4.

Britain:—

Royal Society. *Proceedings xvii. n. 105, 106; Catalogue of Scientific Papers ii.

Royal Asiatic Society. *Journal, New Series, iii. part 2.

Geological Society. *Quarterly Journal, xxiv. Nov. 1868.

Linnean Society. Journal, Zoology x. n. 45; Botany x. n. 48.

Royal Medical and Chirurgical Society. *Transactions, Ser. ii. xxxiii.

Royal Microscopical Society. Quarterly Journal of Microscopical Science, New Ser. viii.; Monthly Microscopical Journal i. part 1.

Pharmaceutical Society. *Journal and Transactions, Ser. 2, x. n. 6, 7.

Zoological Society. Proceedings 1868, ii.

Literary and Philosophical Society, Liverpool. Proceedings, 1865 to 1868.

The papers in recent Biology (Zoology and Botany) contained in the above Transactions and Proceedings, and in the current numbers of periodicals, and the separate works received since the last Report, are as follows:—

Mammalia and General Zoology:—

Record of Zoological Literature iv. 1867. Purchased.

L. Agassiz. Comparison of the skulls of the American Bison and the European Aurochs. Proc. Bost. Soc. Nat. Hist. xi.

R. Brown. On the Mammalian Fauna of Greenland. Proc. Zool. Soc. 1868, ii.

C. Dareste. Notes on a series of experimental researches in Teratology. Ann. Sc. Nat. Zool. Ser. 5, x.

C. J. Eberth. Researches on the liver in Vertebrata, 1 plate. Arch. mikrosk. Anat. iii.

W. H. Flower. On the development and succession of the teeth in the Armadillo. Proc. Zool. Soc. 1868, ii.

G. Gegenbaur. On the torsion of the humerus, woodcuts. Translated from the Jena Zeitscrift. Ann. Sc. Nat. Zool. Ser. 5, x.

J. E. Gray. On *Mico sericeus*, a new American Monkey in the Zoological Society's Gardens. Proc. Zool. Soc. 1868, ii.

J. L. Hayes. The origin, culture, and products of the Angora Goat. Proc. Bost. Soc. Nat. Hist. xi.

W. J. Hays. On the Prong-horn Antelope. Amer. Naturalist, ii.

V. Hensen. Embryological Communications. Arch. mikrosk. Anat. iii.

E. Hering. On the structure of the liver in Vertebrata. Archiv mikrosk. Anat. iii.

W. Lilljeborg. On two subfossil Whales, discovered in Sweden, 11 plates. Nov. Act. Soc. Reg. Upsal. Ser. 3, vi.

C. Macnamara. On the intimate structure of muscular fibre. Proceed. As. Soc. Beng. 1868.

Dr. Maingay. Notes on rare and little-known Malayan Mammals. Journ. As. Soc. Beng. Nat. Hist. 1868.

A. Milne-Edwards. Note on a new species of *Nycticebus*, 1 plate. Nouv. Archiv. Mus. Nat. Hist. Par. iii.

La Valette Saint-George. On the genesis of the seminal bodies in Animals, 1 plate. Arch. mikrosk. Anat. iii.

F. E. Schulze. On the Epithelium- and Gland-cells of Vertebrata, 7 plates. Arch. mikrosk. Anat. iii.

M. Schulze. On the nerves of the eye in Vertebrata. Arch. mikrosk. Anat. iii.

G. Schwalbe. On the Epithelium of papillæ valvatæ. Arch. mikrosk. Anat. iii.

J. Selebob. Mammalia of the Voyage of the Frigate 'Novara,' 4to. 3 plates. Purchased.

S. J. Smith. On the geographical distribution of Animals. Amer. Naturalist, ii.

E. P. Wright. On the Bats of the Seychelles Islands. Ann. Nat. Hist. Ser. 4, ii.

J. Wyman. On symmetry and homology in limbs, woodcuts. Observations on Crania. Proc. Bost. Soc. Nat. Hist. xi.

ORNITHOLOGY:—

The Ibis. New Ser. iv., Oct. 1868. Purchased.

A. D. Bartlett. On the incubation of Apteryx. Proc. Zool. Soc. 1868, ii.

R. C. Beavan. Notes on Indian Raptores, 1 plate. Proc. Zool. Soc. 1868, ii.

R. Brown. Synopsis of the Birds of Vancouver's Island (separate copy from the Ibis). Presented by the Author.

J. Gould. Description of a new species of *Ceyx*. Proc. Zool. Soc. 1868, ii.

E. D. Harries. The structure, flight, and habits of varieties of the domesticated Pigeon. Proc. Bost. Soc. Nat. Hist. xi.

T. H. Huxley. On the classification and distribution of the Alectoromorphæ and Heteromorphæ, map and woodcuts. Proc. Zool. Soc. 1868, ii.

S. Kostarew. Contributions to the knowledge of the lymphatic vessels in Birds, 1 plate. Arch. mikrosk. Anat. iii.

G. M. Lawrence. Descriptions of new American Birds. Ann. Lyc. N. York, viii.

Dr. Maingay. Notes on rare or little-known Malayan Birds. Proc. Asiat. Soc. Beng. 1868.

J. Moleschott. Embryological studies of the Pullet. Mem. R. Acad. Turin, Ser. 2, xxiv.

——. On the ornithological labours of Prof. Filippo de Filippi, with notes on species. Trans. (Atti) R. Acad. Turin, iii.

E. P. Ramsay. On new and rare species of Birds found at Rockingham Bay, Queensland. Proc. Zool. Soc. 1868, ii.

Count Salvadori. Note on the genus *Prionochilus*, Strickl., 1 plate; On new Birds from Borneo. Trans. (Atti) R. Acad. Turin, iii.

P. L. Sclater. Notes on the Pelicans living in the Zoological Society's Gardens, 2 plates and woodcuts. Proc. Zool. Soc. 1868, ii.

P. L. Sclater and O. Salvin. Descriptions of new or little-known American Fringillidæ, Oxyrhamphidæ, Bucconidæ, and Strigidæ, 1 plate and woodcut; Descriptions of four new Birds from Veragua. Proc. Zool. Soc. 1868, ii.

R. B. Sharpe. On two new or little-known Kingfishers, 2 plates. Proc. Zool. Soc. 1868, ii.

W. Stimpson. Illustrations of the North American Birds in the Museum of the Chicago Academy of Sciences, 4 plates. Trans. Chicago Acad. Sc. i.

F. Stoliczka. Ornithological observations in the Sutlej valley. Journ. Asiat. Soc. Bengal Nat. Hist. 1868.

J. Verreaux. Notes on new Chinese Birds. Ann. Sc. Nat. Zool. Ser. 5, x.

— Voit. On the effect of the abstraction of the hemispheres of the brain in Pigeons. Proc. R. Acad. Sc. Munich, 1868.

Ichthyology :—

Capt. Atwood. On the habits of American Gadidæ. Proc. Bost. Soc. Nat. Hist. xi.

F. Day. On *Euctenogobius striatus*, a new gobioid fish from Madras, woodcut; Observations on some freshwater fishes of India. Proc. Zool. 1868, ii.

A. Duméril. Prodromus of a monograph of Sturgeons, 6 plates. Nouv. Archiv. Mus. Par. iii.

A. Günther. Report on a collection of Fishes made at St. Helena by J. C. Melliss, 2 plates.—Descriptions of freshwater fishes from Surinam and Brazil, 3 plates and woodcuts. Proc. Zool. Soc. 1868, ii.

C. Hasse. Remarks on the organs of hearing in Fish. Trans. Phys. Med. Soc. Würzb. N. Ser. i.

E. L. Layard. On *Gymnetrus* (*capensis*?), woodcut. Proc. Zool. Soc. 1868, ii.

T. Lyman. On the habits of migratory Fishes. Proc. Bost. Soc. Nat. Hist. xi.

J. D. Macdonald and C. Barron. On a supposed new *Galeocerdo*, from the Southern Seas, 1 plate. Proc. Zool. Soc. 1868, ii.

W. C. Macintosh. Experiments on young Salmon. Quart. Journ. Microsc. Sc.

J. Murie. On the supposed arrest of development of Salmon when retained in fresh water, 1 plate. Proc. Zool. Soc. 1868, ii.

D. H. Storer. History of the Fishes of Massachusetts, 4to, 39 plates. Reprinted from Mem. Amer. Acad. Presented by the Author.

E. P. Wright. On the transportation of living fish from South of the Equator to Europe. Ann. Nat. Hist. Ser. 4, ii.

J. Wyman. Observations on the development of *Raia Batis*, 1 plate. Mem. Amer. Acad. N. Ser. ix.

Reptiles and Batrachia :—

— Bocourt. Descriptions of new Mexican Chelonia. Ann. Sc. Nat. Zool. Ser. 5, x.

W. Keferstein. On the Australian Batrachia, 4 plates. Wiegm. Archiv, xxxiv.

Prof. Lessona. Notes on *Salamandrina perspicillata*. Proc. Zool. Soc. 1868, ii.

G. Lunel. On two cases of polymelia or supernumerary members in the *Rana viridis* or *esculenta*, Linn., 1 plate. Mem. Soc. Phys. Nat. Hist. Gen. xix.

R. L. Maddox. On the minute anatomy of the fungiform papillæ and nerve-terminations in the tongue of the common Frog, 1 plate. Monthly Microsc. Journ. i.

W. Theobald, Jun. Catalogue of Reptiles in the Museum of the Asiatic Society of Bengal. Journ. As. Soc. Beng. Nat. Hist. 1868.

Mollusca :—

Malakozoologische Blätter.

H. Adams. Descriptions of new Shells from the Mauritius, Isle of Bourbon, and the Seychelles, collected by G. G. Nevill, 1 plate. Proc. Zool. Soc. 1868, ii.

G. F. Angas. Description of a new *Helix* from South Australia, woodcut. Proc. Zool. Soc. 1868, ii.

W. T. Blanford. Contributions to Indian Malacology, no. 9. Journ. Asiat. Soc. Beng. Nat. Hist. 1868.

——. *Fairbankia bombayana*, a new genus of Rissoidæ from Western India. Ann. Nat. Hist. Ser. 4, ii.

L. de Folin. Observations on the septum of Cæcidæ. Journ. Linn. Soc. x.

H. H. Godwin-Austen. Figures of Indian species of *Diplommatina*, 4 plates. Journ. Asiat. Soc. Beng. Nat. Hist. 1868.

W. Hincks. Molluscous animals, no. 3. Canad. Journ. Sc. & Lit. xii.

J. Hogg. The lingual membrane of Mollusca, and its value in classification, 4 plates. Quart. Journ. Microsc. Sc. Also a separate copy presented by the Author.

A. Issel. On the Oysters of the port of Genoa. Trans. (Atti) R. Acad. Turin, iii.

H. J. Krebs. Catalogue of marine Mollusca collected in the Bahama Islands. Ann. Lyc. Nat. Hist. New York, viii.

Prof. Lessona. On the distribution of Oysters in the port of Genoa, map. Trans. (Atti) R. Acad. Turin, iii.

G. Nevill. On some land Mollusca inhabiting Mauritius and the Seychelles. Proc. Zool. Soc. 1868, ii.

— Panceri. Observations on the saliva of Gasteropodous Mollusca. Ann. Sc. Nat. Zool. Ser. 5, x.

T. G. Ponton. Review of some species of *Melo* and *Cymba*. Proc. Zool. Soc. 1868, ii.

L. R. de Pourtales. Contributions to the fauna of the Gulf-stream at great depths. Bull. Mus. Comp. Zool. Boston.

T. Prime. Notes on species of Corbiculadæ, woodcuts. Ann. Lyc. Nat. Hist. New York, viii.

L. Reeve. Conchologia Iconica, completion of vol. xvi. Purchased.

M. Schulze. On the segregating cells of *Limax*. Archiv mikrosk. Anat. iii.

F. H. Troschel. On the bite of *Eburna* and *Nassaria*, 1 plate. Wiegm. Archiv, xxxiv.

Crustacea and Araneida :—

C. Spence Bate. *Macrobrachium*, a new genus, and four new species of freshwater Prawns, 2 plates. Proc. Zool. Soc. 1868, ii.

E. v. Beneden and E. Bessels. On the mode of formation of the blastoderms in some groups of Crustacea. Monthly Microsc. Journ. i.

J. Blackwall. Notice of new or little-known Spiders. Ann. Nat. Hist. Ser. 4, ii.

G. S. Brady. Contributions to the study of Entomostraca, no. 4. Ostracoda from the river Scheldt and the Grecian archipelago. Ann. Nat. Hist. Ser. 4, iii.

O. P. Cambridge. Descriptions of new species and a new genus of Araneida, 3 plates. Ann. Nat. Hist. Ser. 4, iii.

N. M. Hentz. Supplement to the descriptions and figures of American Araneida, 2 plates. Proc. Bost. Soc. Nat. Hist. xi.

— Hesse. On new or rare Crustacea from the French coast, 1 plate. Ann. Sc. Nat. Zool. Ser. 5, x.

V. Lemoine. Researches on the nervous, muscular, and glandular systems of the Lobster. Ann. Sc. Nat. Zool. Ser. 5, x.

Prof. Lessona. Notes on *Porcellia Klugii*, 1 plate. Trans (Atti) R. Acad. Turin, iii.

A. Milne-Edwards. Observations on the Carcinological fauna of the Cape Verd Islands, 2 plates ; Descriptions of new Crustacea from Zanzibar and Madagascar, 3 plates. Nouv. Archiv. Mus. Par. iii.

A. M. Norman. On Crustacea Amphipoda new to science or to

Britain, and on two Isopods belonging to the genera *Cirolana* and *Anilocra*, 3 plates. Ann. Nat. Hist. Ser. 4, ii.

F. Plateau. Investigation of the freshwater Crustacea of Belgium (from the Mém. Cour. Acad. Belg.). Ann. Nat. Hist. Ser. 4, iii.

L. F. de Pourtales. Contributions to the fauna of the Gulf-stream at great depths. Bull. Mus. Comp. Zool. Boston.

H. Tripp. The compound eye of Insects and Crustacea, 2 plates. Pop. Sc. Rev. viii.

ENTOMOLOGY :—

Entomologist, and Entomologists' Monthly Magazine, Dec. 1868 and Jan. 1869.

Entomological Journal of the Netherlands Entomological Society, Ser. 2, iii. parts 2 to 6; iv. part 1.

Journal of the Entomological Society of Stettin xxix. 1868, nos. 1 to 12, 4 plates.

American Entomological Society, Philadelphia. Transactions i. 7 plates; Proceedings vi. n. 2. Practical Entomologist ii. nos. 3 to 12.

A. G. Butler. Descriptions of several new species of Nymphalidean Rhopalocera, 1 plate. Ann. Nat. Hist. Ser. 4, iii.

A. L. Donnadieu. Anatomical and Zoological researches on the genus *Trichodactylus*, 1 plate. Ann. Sc. Nat. Zool. Ser. 5, x.

A. R. Grote and C. T. Robinson. Notes on the Lepidoptera of America, 2 plates. Ann. Lyc. Nat. Hist. New York, viii.

H. Hagen. The Odonata Fauna of Cuba; On locomotion in *Chelifer* and other pseudoscorpions; On *Lachlania abnormis*, a new genus of Ephemera. Proc. Bost. Soc. Nat. Hist. xi.

J. Künckel. On the existence of capillary arterial vessels in Insects. Ann. Sc. Nat. Zool. Ser. 5, x.

A. Matthews. Description of *Limulodes*, a new genus of Trichopterygidæ, 1 plate. Ann. Lyc. Nat. Hist. New York, viii.

A. S. Packard, Jun. On the development of a Dragonfly (*Diplax*), woodcuts; On two species of Saltfly; On the structure of the ovipositor and homologous parts in the male insect, woodcuts. Proc. Bost. Soc. Nat. Hist. xi.

F. P. Pascoe. Descriptions of new genera and species of Tenebrionidæ from Australia, 1 plate. Ann. Nat. Hist. Ser. 4, iii.

H. de Saussure. Studies on the wings of Orthoptera, 1 plate. Ann. Sc. Nat. Zool. Ser. 5, x.

S. H. Scudder. On the Odonata of the Isle of Pines and White Mountains of New Hampshire; On the stridulations of some New-England Orthoptera; Supplement to a list of New-England Butterflies; A new Butterfly from Florida. Proc. Bost. Soc. Nat. Hist. xi.

E. Suffrian. Enumeration of the Chrysomelidæ collected by Dr. Gundlach in Cuba (continued). Wiegm. Archiv, xxxiv.

H. Tripp. The compound eye of Insects and Crustacea, 2 plates. Pop. Sc. Rev. viii.

L. Trouvelot. On monstrosities observed in the wings of Lepidoptera, and how they may be produced; On a method of stimulating the union between Insects of different species. Proc. Bost. Soc. Nat. Hist. xi.

P. R. Uhler. On the Odonata of Hayti. Proc. Bost. Soc. Nat. Hist. xi.

F. Walker. Catalogue of Homopterous Insects collected by Mr. Wallace in the Indian archipelago. Linn. Soc. Journ. Zool. x.

Lower Animals:—

A. Agassiz. On the Embryology of Echinoderms, 4 plates. Mem. Amer. Acad. New Ser. ix.

W. Baird. Description of a new *Sclerostoma* from the stomach of an African Elephant, woodcuts. Proc. Zool. Soc. 1868, ii.

J. H. Bennett. On the molecular origin of Infusoria. Pop. Sc. Rev. viii.

H. J. Carter. Description of a siliceous Sand-sponge found on the South-east coast of Arabia, woodcuts. Ann. Nat. Hist. Ser. 4, iii.

L. Cienkowski. On *Clathrulina*, a new genus of Actinophryeæ, 1 plate. Archiv mikrosk. Anat. iii.

E. Claparède. The Chætopodous Annelids of the Gulf of Naples, 16 plates. Mem. Soc. Phys. Nat. Hist. Geneva, xix.

E. R. Claparède and P. Panceri. Note on an *Alciope*, parasite on *Cydippe densa*, Forsk., 1 plate (from Mem. Soc. Ital. Naples). Presented by Mr. Darwin.

E. Eberhard. On the sexual reproduction of Infusoria. Quart. Journ. Microsc. Sc.

R. Graeff. On *Actinophrys Eichhornii*, especially with reference to its divisibility. Archiv mikrosk. Anat. iii.

J. E. Gray. Descriptions of new genera and species of Alcyonoid Corals in the British Museum, woodcuts. Ann. Nat. Hist. Ser. 4, ii., iii.

Prof. Grube. On the Annelid family of the Maldaniea (from Proc. Siles. Soc. Fatherl. Cult.). Ann. Nat. Hist. Ser. 4, ii.

A. Higginson. Observed facts in the natural history of *Chironomus plumosus*. Proc. Lit. Phil. Soc. Liverpool, 1865–66.

E. T. Hudson. On *Rhinops vitrea*, a new Rotifer, 1 plate. Ann. Nat. Hist. Ser. 4, iii.

A. Hyatt. Observations on Polyzoa (continued), 1 plate and woodcuts. Proc. Essex Inst. v.

H. James-Clark. On the *Spongiæ ciliatæ* as *Infusoria flagellata*, 2 plates. Mem. Bost. Soc. Nat. Hist. i.

J. Luders. On the origin and development of *Bacterium Termo*, Dry., and its connexion with fungi, and remarks by Dr. Hensen. Arch. mikrosk. Anat. iii.

L. F. de Pourtales. Contributions to the fauna of the Gulf-stream at great depths. Bull. Mus. Comp. Zool. Boston, 6.

F. Ratzel. On the development of *Cestodes*.—Descriptions of new Parasites, 1 plate. Wiegm. Archiv, xxxiv.

O. Schmitt. Spongiological communications. Arch. mikrosk. Anat. iii.

M. Schulze. On *Hyalonema*. Arch. mikrosk. Anat. iii.

F. A. Smitt. Critical enumeration of the marine Bryozoa of Scandinavia, and of the marine Bryozoa of the Arctic Regions, 8vo, 25 plates (from Proceed. R. Acad. Stockh.). Presented by Sir Charles Lyell.

L. and F. Stoliczka. On the anatomy of *Sagarta Schilleriana* and *Membranipora benghalensis*. Proc. Asiat. Soc. Beng. 1868.

G. C. Wallich. On the vital functions of deep-sea Protozoa. Monthly Microsc. Journ. i.

——. On *Physalia* and certain Scombroid Fish which are frequently associated with them in tropical and subtropical seas. Ann. Nat. Hist. Ser. 4, iii.

E. P. Wright. Notes on deep-sea dredging. Ann. Nat. Hist. Ser. 4, ii.

——. On a new genus of Gorgonidæ from Portugal, woodcut. Ann. Nat. Hist. Ser. 4, iii.

Phænogamic Botany :—

J. H. Balfour. On *Hieracium collinum*, Fries, new to Britain, 1 plate. Seem. Journ. Bot. vi.

Mrs. M. E. Barber. On the structure and fertilization of *Liparis Bowkeri*, woodcuts. Journ. Linn. Soc. Bot. x.

G. Bentham. Flora Australiensis, vol. iv. Presented by the Author.

T. R. A. Briggs. Notes on Plymouth Plants. Seem. Journ. Bot. vi.

A. Brongniart and A. Gris. Descriptions of remarkable New-Caledonian Plants, 15 plates. Nouv. Archiv. Mus. Par. iv. Also a separate copy, presented by M. Brongniart.

A. Brongniart. Report on the progress of Phytographical Botany in France, 8vo. Presented by the Author.

——. Note on *Pogospermum*, a new Genus of Bromeliaceæ, 1 plate (from the Ann. Sc. Nat.); Considerations on the Flora of New Caledonia (from the Comptes Rendus). Presented by the Author.

R. Brown. Florula Discoana (from the Trans. Bot. Soc. Edinb.). Presented by the Author.

A. T. Drummond. The distribution of Plants in Canada in some of its relations to physical and past geological conditions. Canad. Naturalist, New Ser. iii.

G. Engelmann. On North-American species of *Juncus* (continued). Trans. Acad. Sc. St. Louis, ii.

A. Gray. Characters of new plants from California and elsewhere. Proc. Amer. Acad. Sc. vii.

H. F. Hance. A third decade of Chinese plants; A new Chinese Orchid; On *Elæagnus gonyanthes*, Benth. Seem. Journ. Bot. vi.

——. On the *Phœnix* of the Hong-Kong flora. Seem. Journ. Bot. vii.

——. On the Silkworm-Oaks of North China. Journ. Linn. Soc. Bot. x.

Dr. Hayden. On some plants considered as exotics in the Eastern United States, but indigenous west of the Mississippi. Proc. Amer. Philos. Soc. Philad. x.

J. D. Hooker. On the true *Fuchsia coccinea*, Ait. Journ. Linn. Soc. Bot. x.

— Kœrnicke. New species of *Eriocaulon*. Ann. Mus. Lugd. Bot. iii.

P. Mac Owan. Notulæ Capenses, descriptions of 3 new Senecios. Journ. Linn. Soc. Bot. x.

M. T. Masters. On the early spring-flowering species of *Scilla*. Seem. Journ. Bot. vi.

——. On the structure of the flower of *Napoleona*. Journ. Linn. Soc. Bot. x.

J. Miers. On the genera *Cortesia* and *Rhabdia*. Ann. Nat. Hist. Ser. 4, ii.

F. A. W. Miquel. On Cycadeæ, 2 plates (from the Archiv. Néerland.). Presented by the Author.

——. Prolusiones Floræ Japonicæ (continued); Descriptions of new Asiatic Artocarpeæ, and notes on Figs, with a list of species, 1 plate; Descriptions of new Indian Chrysobalanaceæ; of some Rutaceæ, 1 plate; of the Phytocreneæ of the Indian Archipelago, 1 plate; of *Nyctocalos* and *Radermachera*, new genera of Bignoniaceæ, 1 plate; of some species of *Clerodendron*, 1 plate. Ann. Mus. Bot. Lugd. Bat. iii.

A. G. More. On *Scirpus parvulus*, 1 plate.—*Hippophae rhamnoides* not indigenous to Ireland. Seem. Journ. Bot. vi.

Ferd. v. Mueller. Fragmenta Phytographiæ Australiæ, vol. v. 7 plates. Presented by Mr. Darwin.

W. W. Saunders. Refugium Botanicum. Part 2. Presented by the Author.

G. Schweinfurth. Sketches of the vegetation of the South Nubian coastland. Bot. Zeit. 1868.

— Walpers. Annales Botanices Systematicæ, vii. part 2. Purchased.

J. P. M. Weale. Notes on the structure and fertilization of *Bonatea*, with description of a new species, woodcuts. Journ. Linn. Soc. Bot. x.

C. Wright. Notes on Jussiæa. Journ. Linn. Soc. Bot. x.

E. P. Wright. Note on the Cocoanut of the Seychelles Islands. Journ. Linn. Soc. Bot. x.

Physiological and Miscellaneous Botany:—

B. Frank. Influence of gravitation on the growth of some parts of plants. Bot. Zeit. 1868.

G. Gulliver. Notes on Lemnaceæ, and the discovery of the raphidian character in systematic botany. Seem. Journ. Bot. vi.

J. Hanstein. On the organs of secretion of resin and viscid matter in leaf-buds, 2 plates. Bot. Zeit. 1868.

G. Henslow. Note on the structure of *Genista tinctoria*, as apparently affording facilities for the intercrossing of distinct flowers. Journ. Linn. Soc. Bot. x.

F. Hildebrand. Translations of portions of Darwin's paper on illegitimate unions of dimorphic and trimorphic plants. Bot. Zeit. 1868.

W. Hofmeister. Handbook of Physiological Botany (Handbuch etc.), i. part 2, General Morphology of Plants. Purchased.

W. Hofmeister. New Contributions to the Knowledge of the Formation of the Embryo of Phanerogams, 27 plates (from the Trans. R. Sax. Soc. Sc.). Presented by Mr. Currey.

J. E. Howard. On the Calisaya barks of Eastern Bolivia, 1 plate. Seem. Journ. Bot. vii.

Fritz Müller. Experiments on the fertilization of the Cipó-albo (*Bignonia*).—Phenomena of fertilization in Orchids. Bot. Zeit. 1868.

C. Parish. Dimorphism of flowers in *Cymbidium tigrinum*, woodcuts. Journ. Linn. Soc. Bot. x.

R. A. Philippi. On a monstrous *Cactus* flower, 1 fig.; On a monstrous *Senecio vulgaris*. Bot. Zeit. 1868.

P. van Tieghem. Researches on the structure of the pistil. Ann. Sci. Nat. Bot. Ser. 5, ix.

Cryptogamic Botany:—

A. Braun. On the Australian species of *Isoetes*. Proc. R. Acad. Berlin, 1868.

L. Cienkowski. On the structure and development of Labyrinthuleæ, 3 plates. Arch. mikrosk. Anat. iii.

P. T. Cleve. Monograph of the Swedish species of Algæ Zygnemaceæ, 10 plates. Trans. (Nov. Act.) R. Soc. Sc. Upsala.

F. Cohn. Contributions to the physiology of Phycochromaceæ and Florideæ, 2 plates. Archiv mikrosk. Anat. iii.

C. Collingwood. On a luminous fungus from Borneo. Journ. Linn. Soc. Bot. x.

G. Dickie. Notes on Mosses &c. collected by Mr. James Taylor on the shores of Davis Straits. Journ. Linn. Soc. Bot. x.

J. E. Duby. Selection of new or little-known exotic Cryptogams (Mosses), 4 plates. Mem. Soc. Phys. Nat. Hist. Gen. xix.

A. M.-Edwards. On the habits of Diatomaceæ and Desmidiaceæ. Proc. Bost. Soc. Nat. Hist. xi.

W. Füsting. Contributions to the history of the development of Lichens, 1 plate. Bot. Zeit. 1868.

J. E. Gray. *Elachista stellaris*, a seaweed new to the British flora. Ann. Nat. Hist. Ser. 4, ii.

T. Hartig. On the production of Fungi in germless spaces. Bot. Zeit. 1868.

F. Kitton. New species of Diatomaceæ. Quart. Journ. Microsc. Sc. 1868.

S. Kneeland. On a fungoid growth or caterpillar-fungus from the Philippine Islands. Proc. Bost. Soc. Nat. Hist. xi.

P. G. Lorenz. *Musci frondosi* collected by H. Krause in the Ecuador province Loja. Bot. Zeit. 1868.

J. Lüders. On the connexion of *Bacterium Termo*, Duj., with fungi. Arch. mikrosk. Anat. iii.

J. D. Macdonald. On the structure of the Diatomaceous frustule and its genetic cycle, 1 plate. Ann. Nat. Hist. Ser. 4, iii.

K. Müller (Halle). Contributions to the Moss-flora of East Australia. Linnæa, xxxv.

W. Nylander. Additions to European Lichenography (continued). Flora, 1868.

L. Rabenhorst. Flora Europæa Algarum aquæ dulcis et submarinæ, 8vo, woodcuts. Purchased.

— Répart. Observations on *Mougeotia genuflexa*, Ag., and on the formation of its spores, 1 plate. Ann. Sc. Nat. Bot. Ser. 5, ix.

W. C. Roberts. On fungoid growths in aqueous solutions of silica. Quart. Journ. Microsc. Sc. 1868.

M. Schiff. On the sculpture of the flint-case of *Grammatophora*, woodcut. Arch. mikrosk. Anat. iii.

E. Stitzenberger. On *Lecanora subfusca*. Bot. Zeit. 1868.

J. L. Thudichum. Relation of microscopic fungi to great pathological processes, particularly the progress of cholera. Monthl. Microsc. Journ. i.

H. C. Wood, jun. On a new confervoid growth. Proc. Amer. Philos. Soc. Philad. x.

MISCELLANEOUS:—

A. Bastian. On constancy and limits of variation in the human race (Das Beständige etc.). 8vo, map. Presented by Mr. Darwin.

G. Boccardo. Fisica del Globo: a complete course of physical geography and meteorology. 8vo. Presented by Mr. Darwin.

W. T. Brigham. Notes on the volcanoes of the Hawaiian Islands. 4to, 5 plates and woodcuts. Presented by Mr. Darwin.

A. Brongniart. Note on a fossil Lycopodiaceous fruit (from the Comptes Rendus). Presented by the Author.

Geological works published by the Geological Commission of Portugal: viz., F. da Costa, Gasteropods of the Tertiary Deposits of Portugal, 28 plates;—J. F. N. Delgado, On the existence of Man at very remote periods, 3 plates;—C. Ribeiro, Description of

the Quaternary Soil of the Hydrographical Basins of the Tagus and the Sado, map. 4to. Presented by Mr. Darwin.

R. Garner. Holiday excursions of a naturalist. Presented by the Author.

C. Martens. On British and other Botanical Gardens (from the Revue des Deux Mondes). Presented by the Author.

Catalogue of the National Portrait Exhibition, 1868. Presented by the Science and Art Department of the Committee of the Council of Education.

February 4th, 1869.

George Bentham, Esq., President, in the Chair.

Mr. Carruthers, F.L.S., exhibited a male cone of *Encephalartos latifrons*, Lehm., which had been produced by a plant in the collection of James Yates, Esq., of Lauderdale House, Highgate. It possessed characters by which it might be distinguished from the cones of *E. horridus*, Lehm., to which species it had been referred as a variety by Miquel and De Candolle.

The following papers were read :—

1. "On the Stone-Grasshopper of Graham's Town, South Africa," by Mrs. Barber. Communicated by Dr. Hooker, V.P.L.S. &c.

2. "Catalogue of Ceylon Spiders," Part 1, by the Rev. O. P. Cambridge. Communicated by James Salter, Esq., F.L.S.

3. "Descriptions of two new Species of *Araneidea*, with characters of a new Genus," by the same.

4. "List of Spiders captured by E. P. Wright, M.D., in the Province of Lucca, in the Summer of 1863, with Characters of new or little-known Species," by John Blackwall, Esq., F.L.S.

5. "Remarks on several Genera of Annelides belonging to the group of *Eunicea*," by William Baird, M.D., F.L.S.

6. "Observations on Lichens collected by R. Brown, Esq., F.R.G.S., in West Greenland," by W. L. Lindsay, M.D., F.L.S.

February 18th, 1869.

George Bentham, Esq., President, in the Chair.

George Rogers, M.D., and George H. Lewes, Esq., were elected Fellows.

The following paper was read:—

"A Contribution to the Anatomy, Physiology, and Distribution of the *Firolidæ*," by Alexander Rattray, M.D., Surg. R.N. Communicated by George Busk, Esq., Sec.L.S.

March 4th, 1869.

George Bentham, Esq., President, in the Chair.

John Charles Galton, Esq., and Richard Mestayer, Esq., were elected Fellows.

The following papers were read:—

1. "On the Similarity between the Genus *Drapernaldia* and the Confervoid Filaments of Mosses," by J. Braxton Hicks, M.D., F.R.S., F.L.S., &c.

2. "Remarks on the Generic Name '*Cascarilla*,'" by H. A. Weddell, M.D., F.M.L.S.

3. "Revision of the Genus *Cassia*," by George Bentham, Esq., Pres. L.S.

March 18th, 1869.

George Bentham, Esq., President, in the Chair.

Frederick Edward Hulme, Esq., and James Leathem, M.D., were elected Fellows.

Dr. Cobbold, F.L.S., exhibited portions of a Westphalian Ham swarming with *Entozoa*. The slices had been received from Dr. Prior, whose nephew, Mr. F. H. Goldney, had sent them to him, stating that the ham had been purchased at a grocer's for 19*s*. The "measles," or *Cysticerci*, were alive, and presented the characters common to the larvæ of the Armed Tapeworm, or *Tænia Solium*.

Mr. W. G. Smith, F.L.S., exhibited fresh specimens of a new British *Peziza*, *P.* (*Discina*) *macrocalyx*, Riess., found by Mr. J. A. Clarke, of Street, Somerset.

The following paper was read :—

"Monograph of the British Roses," by J. G. Baker, Esq., F.L.S.

April 1st, 1869.

George Bentham, Esq., President, in the Chair.

David John French, Esq., was elected a Fellow.

The following paper was read :—

"On the Genus *Boswellia*, with Descriptions and Figures of Three New Species," by George Birdwood, M.D. Communicated by Daniel Hanbury, Esq., F.R. & L.SS.

April 15th, 1869.

George Bentham, Esq., President, in the Chair.

Sir James Tyler, John Day, Esq., and Henry Spicer, Jun., Esq., were elected Fellows.

The following papers were read :—

1. "On the Fertilization and Dissemination of *Duvernoya adhatodoides*," by Mrs. Barber. Communicated by Dr. Hooker, V.P.L.S. &c.

2. "Ant-agency in Plant-structure, or the Modifications in the Structure of Plants which have been caused by Ants, by whose long-continued agency they have become hereditary, and have acquired sufficient permanence to be employed as Botanical Characters," by Richard Spruce, Esq. Communicated by Charles Darwin, Esq., F.R. & L.SS.

3. "Notes on the *Stictei* in the Kew Museum," by Charles Knight, Esq., F.L.S.

4. "Synonymia Muscorum Herbarii Linneani apud Societatem Linneanam Londinensem asservati," exposuit W. Ph. Schimper, S.L.L.S.

May 6th, 1869.

George Bentham, Esq., President, in the Chair.

The Rev. James M. Crombie was elected a Fellow, and M. Gustave Thuret and Dr. Jeffries Wyman Foreign Members.

The following papers were read:—

1. A Letter from Dr. R. O. Cunningham, Naturalist to H.M.S. 'Nassau,' surveying the Straits of Magalhaens, to Dr. Hooker, V.P.L.S.

2. "On three new Genera of *Verbenaceæ*, from Chile and its adjacent Regions," by John Miers, Esq., F.R.S., L.S., &c.

Report on the Additions to the Library:—

The Publications of Scientific Bodies received since the last Report (pp. xxvii–xlii) have been the following:—

Sweden:—

University of Lund, Transactions (Acta or Års-skrift) for 1866 and 1867.

Russia:—

Imperial Academy of Sciences, St. Petersburg, Memoirs, Ser. 7, xii. parts 1 to 3. Bulletin, xiii. parts 1 to 3.

Entomological Society of Russia. Horæ v. n. 4.

Imperial Society of Naturalists of Moscow. Bulletin 1868, i. n. 1, 2.

Dutch Netherlands:—

Botanical Museum of Leyden. Annales, iv. parts 1 to 4.

Germany:—

Royal Academy of Sciences, Berlin. Transactions (Abhandlungen) for 1867. Proceedings (Monatsbericht), Nov. 1868 to Feb. 1869.

Royal Prussian Horticultural Society, Berlin. Weekly Journal (Wochenschrift), July to December, 1868, Jan. and Feb. 1869.

Imperial Academy of Sciences, Vienna. Transactions (Denk-

schriften), Mathematical and Natural-History Class, xxviii. Proceedings (Sitzungsberichte), *Mathematical Section, lvii. 1 to 3; Natural History Section, lvii. 1 to 3; besides the Minutes of Meetings published weekly under the title of Anzeige.

Imperial and Royal Zoologico-Botanical Society of Vienna. Transactions (Verhandlungen), xviii. parts 1 to 4, and two separate works enumerated below.

Imperial and Royal Geological Institute (Reichsanstalt), Vienna. *Transactions (Verhandlungen), 1868, n. 14; *Journal (Jahrbuch), xviii. n. 3 and 4.

Royal Academy of Sciences, Munich. *Proceedings (Sitzungsberichte), 1868, n. 2 to 4.

Royal Society of Sciences and University, Göttingen. Nachrichten (Transactions and Reviews), 1868.

Physico-Medical Society of Würzburg. Transactions (Verhandlungen), New Ser. i. n. 3.

SWITZERLAND :—

Helvetic Society of Natural Sciences, Zurich. Transactions (Neue Denkschriften or Nouveaux Mémoires), xxii.

Natural-History Society of Basle. Transactions (Verhandlungen), v. part 1.

Vaudois Society of Natural Sciences, Lausanne. Bulletin, ix. n. 56, to x. n. 60.

ITALY :—

Royal Technical Institute of Palermo. Journal of Natural and Economical Sciences (Giornale), iv. parts 1 to 3.

FRANCE :—

Botanical Society of France, Paris. Bulletin, xiv. Reports of Sittings to n. 3; Bibliography complete; xv. Reports of Sittings, n. 1; Bibliography, A to E.

Entomological Society of France. Annals, Ser. 4, viii.

Linnean Society of Lyons. Annals, xvi.

Society of Physical and Natural Sciences, Bordeaux. *Memoirs, vi. parts 1 and 2.

BELGIUM :—

Royal Academy of Sciences, Brussels. *Memoirs, xxxvii.; Bul-

letin, xxv. and xxvi. 1868; *Meteorological Annual for 1867; *Annuaire for 1869.

Royal Botanical Society of Belgium. Bulletin, vii. parts 2 and 3.

East India :—

Asiatic Society of Bengal. Journal of Natural History, New Series, xxxviii.; Physical Sciences, n. 1 to 4; *Proceedings, 1868, n. 12, 1869, n. 1.

North America :—

American Philosophical Society, Philadelphia. *Proceedings, 1868, to November; *History &c., 1868, n. 2.

Britain :—

Royal Society. *Proceedings, xvii. n. 107 to 110.

Entomological Society. Transactions, Ser. 3, iii., completed, and vol. for 1868, 1869, part 1.

Geological Society. *Quarterly Journal, xxv. part 1.

Linnean Society. Transactions, xxvi. part 3; Journal, Botany, xi. n. 49.

Palæontographical Society. *Transactions, xxii. 1868.

Pharmaceutical Society. Journal and Transactions, Ser. 2, x. to May.

Quekett Microscopical Club. Journal, n. 4 to 6.

Ray Society. Plates to R. Brown's Miscellaneous Works.

Royal Agricultural Society. Journal, Ser. 2, v. part 1.

Royal Society of Arts. *Journal to May.

Royal Geographical Society. *Proceedings, xiii. n. 1 and 2.

Royal Horticultural Society. Journal, ii. part 6.

Royal Microscopical Society. Monthly Journal and Transactions, Feb. to April.

Royal Society of Edinburgh. Transactions, xxv. 1; Proceedings, 1867–1868.

Botanical Society of Edinburgh. Transactions, ix. part 2.

Royal Physical Society, Edinburgh. Proceedings, iii. 1865–1866.

Royal Dublin Society. Journal, v. n. 37.

Plymouth Institution and Devon and Cornwall Natural-History Society. Annals, Report, and Transactions, iii, n. 1.

Devonshire Association for the Advancement of Science, Literature, and Art. Report and Transactions, ii. part 2.

The papers in recent Biology (Zoology and Botany) contained in the above Transactions and Proceedings, and in the current numbers of periodicals, and the separate works received since the last Report, are as follows :—

Mammalia and Miscellaneous Zoology :—

W. Andrews. On a Cetacean new to Ireland. Journ. R. Dublin Soc. v.

P. van Beneden. Whales and their Geographical Distribution.—On the Anatomy of a Fœtus of a Greenland Whale. Bull. R. Acad. Sc. Belg. xxv., xxvi. (1868).

J. J. Brandt. Symbolæ Sirenologicæ, 9 plates. Mem. Acad. Imp. Sc. Petersb. Ser. 7, xii.

A. Bruhin. The Vertebrata of the Vorarlberg. Trans. Zool. Bot. Soc. Vienna, xviii.

A. Fick. Researches on Muscular Action. Trans. Helv. Soc. Nat. Sc. xxii., and (with J. Wislizenus) Ann. Sc. Nat. Zool. Ser. 5, x.

L. J. Fitzinger. Critical Researches on the Species of the Natural Family Sorices, 2 articles. Proceed. Imp. Acad. Sc. Vienna, Nat. Hist. lvii.

J. C. Galton. The Muscles of the Fore and Hind Limbs in *Dasypus sexcinctus*, 1 plate.—Myology of the Upper and Lower Extremities of *Orycteropus capensis*, 2 plates. Trans. Linn. Soc. xxvi.

A. Grandidier. On Recent Zoological Discoveries made in Madagascar. Ann. Sc. Nat. Zool. Ser. 5, x.

J. E. Gray. On the Varieties of Dogs.—On a new *Hyrax*. Ann. Nat. Hist. Ser. iv. 3.

R. Hensel. Report on the Contributions to the Natural History of Mammalia for 1866, concluded. Wiegm. Archiv, xxxiii.

W. Houghton. On the Rabbit as known to the Ancients. Ann. Nat. Hist. Ser. 4, iii.

A. v. Hüttenbrenner. Researches on the Intraocular Muscles in Animals. Proc. Imp. Acad. Sc. Vienna, Nat. Hist. lvii.

L. H. Jeitteles. On a Bat new to Lower Austria. Trans. Zool. Bot. Soc. Vienna, xviii.

A. Milne-Edwards. On the group of Mole-Rats (from the Comptes Rendus). Ann. Nat. Hist. Ser. 4, iii.

W. Peters. On some Bats collected in Sarawak by the Marquis G. Doria, including a new species.—On some New Mammalia. Proc. R. Acad. Berlin, 1868.

G. Rolleston. On the Homologics of certain Muscles connected with the Shoulder-joint, 1 plate. Trans. Linn. Soc. xxvi.

L. Rütimeyer. Attempt at a Natural History of Bovine Animals in their relations to Cud-chewing Animals in general, 6 plates and woodcuts. Trans. Helv. Soc. Sc. xxii.

L. Sabaneeff. On the Fauna of the Government of Jaroslav. Bull. Soc. Imp. Nat. Mosc. 1868, i.

U. and M. Scheff. Various Anatomical Papers in Journ. Nat. Sc. R. Techn. Instit. Palermo, iv.

J. Tanner Davy. History of the Rise and Progress of the Devon breed of Cattle. Journ. R. Agric. Soc. Ser. 2, v.

Prof. Tanner. The Influence of Climate and Hereditary Character on Sheep. Journ. R. Agric. Soc. Ser. 2, v.

F. H. Troschel. Report on the Contributions to the Natural History of Mammalia for 1867. Wiegm. Archiv, xxxiv.

E. Verdon. On the Mode of Insertion of the Fibres of Muscles. Proc. Imp. Acad. Sc. Vienna, Nat. Hist. lvii.

Numerous Anatomical Papers in the Archiv für mikroscopische Anatomie, iv.

Numerous Short Notes on Scotch Zoology, in Proc. R. Phys. Soc. Edinburgh, iii. (1865–66).

Ornithology :—

A. Bruhin. The Vertebrata of the Vorarlberg, 2 papers. Trans. Zool. Bot. Soc. Vienna, xviii.

F. Cramer. On the relations and development of the Egg of Birds, 1 plate. Trans. Phys. Med. Soc. Würzburg, New ser. i.

J. Davy. On the Temperature of the Common Fowl. Trans. R. Soc. Edinburgh, xxv.

G. King. On the Birds of the Goona district. Journ. Asiat. Soc. Bengal, Phys. Sc. 1868.

D. Lindgren. On the structure of the Kidney in Birds. Nachr. R. Soc. Sc. Göttingen, 1868.

A. Milne-Edwards. On the zoological affinities of Aphanapteryx, which still lived in the Mauritius in the 16th century, 2 plates. Ann. Sc. Nat. Zool. Ser. 5, x.

L. Sabaneeff. Materials for the Fauna of the Government of Jaroslav. Bull. Soc. Imp. Nat. Mosc. 1868, i.

W. S. Savory. On the structure of the red blood-corpuscules of oviparous animals. Journ. R. Microsc. Soc. 1869.

Ibis, New ser. v. n. 18.

ICHTHYOLOGY:—

— Bocourt. Descriptions of new species of *Serranus* and *Mesoprion*. Ann. Sc. Nat. Zool. Ser. 5, x.

A. Bruhin. The Vertebrata of the Vorarlberg, 2 papers. Trans. Zool. Bot. Soc. Vienna, xviii.

G. Gulliver. On the fibres of the crystalline lens of the Lamprey. Journ. R. Microsc. Soc. 1869.

A. Günther. Notice of a gigantic species of *Batrachus* from the Seychelles Islands. Ann. Nat. Hist. Ser. 4, iii.

J. Hyrtl. On the bladder of the ductus cysticus of Fishes, 3 plates. Trans. Imp. Acad. Sc. Vienna, Nat. Hist. xxviii.

— Jourdain. Researches on the lymphatic system of the Conger Eel. Ann. Sc. Nat. Zool. Ser. 5, x.

C. Kupffer. Observations on the development of Osseous Fishes, 3 plates. Archiv mikrosk. Anat. iv.

W. Peters. On *Chiloglanis*, a new genus, and some other fresh-water fishes of East Africa, 1 plate. Proceed. R. Acad. Berlin, 1868.

G. du Plessis and J. Combe. On the Fishes of the district of Orbe. Bull. Soc. Vaud. Sc. Nat. x.

Dr. Scott. On the Salmonidæ of Devon, 2 plates. Trans. Dev. Assoc. Sc. etc. ii.

F. Steindachner. Ichthyological report on a journey through Spain and Portugal, continued, 6 plates. Proc. Imp. Acad. Sc. Vienna, Nat. Hist. lvii.

F. H. Troschel. Reports on the contributions to Ichthyology for 1867. Wiegm. Archiv, xxxiv.

F. Wahlgren. Some observations on *Mola Nasus*. Trans. Univ. Lund, 1867.

S. Ward. Note on *Batrachus gigas*. Ann. Nat. Hist. Ser. 4, iii.

ERPETOLOGY:—

E. Ballion. *Ranodon Kessleri*, a new aquatic Salamander from S. W. Siberia. Bull. Soc. Imp. Nat. Mosc. 1868, i.

— Bocourt. Descriptions of new species of *Bothrops*. Ann. Sc. Nat. Zool. Ser. 5, x.

A. Bruhin. The Vertebrata of the Vorarlberg, 2 papers. Trans. Zool. Bot. Soc. Vienna, xviii.

E. Fleischl. On the structure of the so-called glandula thyreoidea of Frogs. Proceed. Imp. Acad. Sc. Vienna, Nat. Hist. lvii.

J. E. Gray. On *Naultinus lineatus*, a new Lizard from New Zealand. Ann. Nat. Hist. Ser. 4, iii.

R. Hensel. Contributions to the knowledge of South-American Vertebrata. Wiegm. Archiv xxxiv.

W. Keferstein. Descriptions of new Batrachia from Australia and from Costa Rica. Nachr. R. Soc. and Univ. Göttingen, 1868, and Wiegm. Archiv, xxxiv.

O. C. Marsh. On the metamorphosis of *Siredon* into *Amblystoma*, woodcuts. Zoologist, Ser. 2, iv.

E. Newman. Collected notes on British Reptiles. Zoologist, Ser. 2, iv.

P. Owsjannikow. Development and structure of the spermatozoa of Frogs. Bull. Acad. Imp. Sc. Petersb. xiii.

W. Peters. On the auricular bones and Meckel's cartilage of Crocodiles.—On some new Amphibia. Proc. R. Acad. Sc. Berlin, 1868.

——. On the auricular bones of Tortoises, Lizards, and Snakes.—On the cavities of the lower jaw of crocodiles.—New genera and species of Lizards. Proc. R. Acad. Sc. Berlin, 1869.

A. W. E. O'Shaughnessy. On Lizards of the group *Anolis*. Ann. Nat. Hist. Ser. 4, iii.

F. Steindachner. On a new species of *Hylorana* from Cape York. Proc. Imp. Acad. Sc. Vienna, Nat. Hist. lvii.

A. Strauch. On Adanson's Black Crocodile, in reply to J. E. Gray.—On the venomous serpent *Tomyris oxiana*, Eichw. Bull. Acad. Imp. Sc. Petersb. xiii.

F. H. Troschel. Report on contributions to Erpetology for 1867. Wiegm. Archiv, xxxiv.

Mollusca :—

A. Adams. On the species of *Veneridæ* found in Japan. Ann. Nat. Hist. Ser. 4, iii.

W. T. Blanford. On *Georissa* and *Hydrocena*, 1 plate.—Notes on Indian and Mascarene Land Shells, woodcuts. Ann. Nat. Hist. Ser. 4, iii.

T. Boll. Contributions to the Histology of Mollusca. Archiv mikrosk. Anat. 1869, Suppl.

A. A. Caruana. Systematic enumeration of the Gaulo-Maltese Mollusca of the late Giuseppe Mamo. Presented by the author.

J. Davidson. Notes on recent Mediterranean species of Brachiopoda. Ann. Nat. Hist. Ser. 4, iii.

J. E. Gray. On *Othelosoma*, a new genus of African Slugs. Ann. Nat. Hist. Ser. 4, iii.

L. Guppy. Additions to the catalogue of Land and Freshwater Mollusca of Trinidad (from Proc. Scient. Assoc. Trinidad). Presented by the author.

W. Keferstein. On *Borlasia hermaphroditica*.—On the anatomy and development of some marine *Planariæ* of St. Malo. Nachr. R. Soc. Sc. and Univ. Göttingen, 1868.

Lacaze-Duthiers. On the organs of hearing in Mollusca (from the Institut). Journ. R. Microsc. Soc. 1869.

J. D. Macdonald. On the homologies of the dental plates and teeth of proboscidiferous Gasteropoda. Ann. Nat. Hist. Ser. 4, iii.

St. G. Mivart. The Cuttle-fish, 1 plate. Pop. Sc. Rev. viii.

R. Stepanoff. Development of the organs of generation of *Phallaria*. Bull. Acad. Imp. Sc. Petersb. xiii.

F. H. Troschel. Report on the contributions to the natural history of Mollusca for 1867. Weigm. Archiv, xxxiv.

G. C. Wallich. On some undescribed testaceous Rhizopods from the North Atlantic deposits, 1 plate.

Journal de Conchyliologie, Ser. 3, ix. part 1, 2.—Malakozoologische Blätter to Jan. 1868.—Reeve's Conchologia Iconica to part 279.

Crustacea and Arachnida :—

P. v. Beneden. The genus *Dactycotyle* and the eggs of Trematodes, 1 plate. Bull. R. Acad. Sc. Belgium, xxv. (1868).

P. v. Beneden and E. Bessels. On the formation of the blastoderm in some groups of Crustacea, 1 plate. Bull. R. Acad. Sc. Belgium, xxv. (1868).

A. Boeck. Observations on the Amphipoda occurring on the Norwegian coasts (from the Trans. Scandin. Naturf.). Ann. Nat. Hist. Ser. 4, iii.

G. S. Brady. Notes on a weeks' dredging on the coast of Ireland, 5 plates. Ann. Nat. Hist. Ser. 4, iii.

E. Claparède. Studies on Acarides, 11 plates. Zeitsch. wissen. Zool. xviii.

V. v. Ebner. *Helleria*, a new genus of Isopoda, 1 plate. Trans. Zool. Bot. Soc. Vienna, xviii.

J. Gerbe. On the ovarian egg of Sacculinæ (from the Comptes Rendus). Journ. R. Microsc. Soc. 1869.

O. Hermann. On the sexual organs of *Epeira quadrata*, Walkenaer. Trans. Zool. Bot. Soc. Vienna, xviii.

— Hesse. Observations on new and rare Crustacea of the French coast, 1 plate. Ann. Sc. Nat. Zool. Ser. 5, x.

J. A. Lyttkens. Contributions to the anatomy of Crustacea, 2 plates. Trans. Univ. Lund. 1866.

A. Metzger. On the male and female of the genus *Lernæa* before the so-called retrograde metamorphosis. Nachr. R. Soc. and Univ. Göttingen, 1868 (also Ann. Nat. Hist. Ser. 4, iii., translated from Wiegm. Archiv, xxxiv.; see above p. xii).

W. Salensky. On *Sphæronella Leuckartii*, a new parasitical Crab, 1 plate. Wiegm. Archiv, xxxiv.

A. Sanders. Notes on zoosperms of Crustacea, 2 plates. Monthl. Microsc. Journ. i.

J. Slade. On the microscopical structure of the Shell of Crustacea. Journ. Quek. Microsc. Club, i.

Entomology:—

S. Bertolini. New Beetles from the Trentino. Trans. Zool. Bot. Soc. Vienna, xviii.

F. Brauer. New and little-known Odonata.—Two new species of *Myrmeleon*.—New Neuroptera, 2 papers, 1 plate (all collected by Dr. Semper).—Enumeration of the Neuroptera now known. Trans. Zool. Bot. Soc. Vienna, xviii.

J. Cordeaux. Notes on Bird-parasites. Zoologist, Ser. 2, iv.

R. Damianitsch. On the metamorphosis of *Xylophagus ater*. Trans. Zool. Bot. Soc. Vienna, xviii.

R. Felder. Baron Ransonnet's new Indian Lepidoptera. Trans. Zool. Bot. Soc. Vienna, xviii.

F. Fieber. New European *Bythoscopida* and *Æliæ*, 1 plate. Trans. Zool. Bot. Soc. Vienna, xviii.

— Förster. Monograph of the genus *Campoplex*, 1 plate. Trans. Zool. Bot. Soc. Vienna, xviii.

G. v. Frauenfeld. Zoological Miscellanies. Trans. Zool. Bot. Soc. Vienna, xviii.

W. F. Kirby. On the diurnal Lepidoptera of the extratropical northern hemisphere. Journ. R. Dublin Soc. v.

F. Kowary. Dipterological Notes. Trans. Zool. Bot. Soc. Vienna, xviii.

J. Künckel. On the organization and development of the dipte-

rous genus *Volucella* (from the Comptes Rendus). Ann. Nat. Hist. Ser. 4, iii.

B. T. Lowne. On the Proboscis of the Fly. Journ. Quek. Microsc. Club, i.

S. F. MacIntyre. Notes on the scale-bearing Poduræ, 2 plates. Journ. R. Microsc. Soc. 1869.

E. L. Mayr. On *Cremastogaster Ransonneti*. Trans. Zool. Bot. Soc. Vienna, xviii.

L. Miller. Entomological journey in the East-Galician Carpathian Mountains, with descriptions of new genera and species. Trans. Zool. Bot. Soc. Vienna, xviii.

P. Millière. New Caterpillars and Lepidoptera, continued, 8 plates. Ann. Soc. Linn. Lyons, xvi.

E. Mulsant and A. Godard. Three new Coleoptera.—Three new Alphitubera. Ann. Soc. Linn. Lyons, xvi.

E. Mulsant and V. Mayet. A new species and genus of Hemiptera Homoptera.—A new *Anisotoma*. Ann. Soc. Linn. Lyons, xvi.

E. Mulsant and A. Rey. Monograph of *Floricolæ*, continued, 8 plates.—Three new *Byrrhida*. Ann. Soc. Linn. Lyons, xvi.

J. E. Planchon. On the Aphis of the Vine, *Phylloxera vastatrix*, 3 papers. Presented by the author.

H. B. de Ricci. On the culture of the Japanese oak-feeding Silkworm, *Bombyx Yama-mai*. Journ. R. Dublin Soc. v.

L. Sabaneeff. Materials for the Fauna of the Government of Jaroslav. Bull. Soc. Imp. Nat. Mosc. 1868, i.

J. R. Schiner. Concluding report on the Diptera of the Novara expedition. Trans. Zool. Bot. Soc. Vienna, xviii.

J. A. Smith. Notes on the Insects which feed on the Ordeal Bean of Calabar. Proc. R. Phys. Soc. Edinburgh, iii.

F. Smith. Wasps and their habits. Ann. Nat. Hist. Ser. 4, iii.

R. Thompson. Report on Insects destructive of Forests, 16 plates and photographs. Presented by the Author?

R. Trimen. On some remarkable mimetic analogies among African Butterflies, 2 plates. Trans. Linn. Soc. xxvi.

C. Tschek. On the Austrian *Pimplaria*, 1 plate.—On the Austrian *Tryphoneda*. Trans. Zool. Bot. Soc. Vienna, xviii.

J. Winnertz. Eight new species of *Sciara*. Trans. Zool. Bot. Soc. Vienna, xviii.

E. P. Wright. Notes on the Dragonflies of the Seychelles. Ann. Nat. Hist. Ser. 4, iii.

P. C. Zeller. On the Lepidoptera of Upper Carinthia and the Littorale. Trans. Zool. Bot. Soc. Vienna, xviii.

Horæ Societatis Entomologicæ Rossicæ, v. n. 4.

Entomological Society's Transactions, completion of Ser. 3, iii. and of the vol. for 1868.

Entomologist and Entomologists' Monthly Magazine for February to May.—Entomologists' Annual for 1869.—Insect-hunter's Year-book for 1868. All presented by the Editors.

Lower Animals:—

L. S. Beale. Protoplasm and Living Matter. Monthl. Microsc. Journ. i.

P. van Beneden. On the parasites of the White Crane, 2 plates. Bull. R. Acad. Sc. Belgium, xxv.

H. J. Carter. Notes on the filigerous green Infusoria of the Island of Bombay, 1 plate.—Strange phenomena in a Microscopic Cell (same plate). Ann. Nat. Hist. Ser. 4, iii.

G. v. Frauenfeld. Zoological Miscellanies. Trans. Zool. Bot. Soc. Vienna, xviii.

J. Gerbe. On the constitution and development of the ovarian egg of the *Sacculinæ*. Ann. Nat. Hist. Ser. 4, iii.

J. E. Gray. Notes on the fleshy Alcyonoid Corals.—On the manner of growth of *Hyalonema*. Ann. Nat. Hist. Ser. 4, iii.

E. Grube. On the Annelida and Gephyrea of the Red Sea, collected by Baron v. Frauenfeld, 2 plates. Trans. Zool. Bot. Soc. Vienna, xviii.

C. Heller. The Zoophytes and Echinoderms of the Adriatic Sea, 3 plates. Separately published by the Zoologico-Botanical Society of Vienna.

J. Hopkinson. British Graptolites, 1 plate. Journ. Queck. Microsc. Club, i.

C. T. Hudson. On *Iriarthra longiseta*, 1 plate. Monthl. Microsc. Journ. i.

W. S. Kent. On some new Infusoria from the Victoria Docks. Monthl. Microsc. Journ. i.

A. Kowalewsky. Researches on the development of Cœlenterata.—Contributions to the history of the development of Tunicata. Nachr. R. Soc. and Univ. Göttingen, 1868.

E. R. Lankester. Contributions to the knowledge of the Lower Annelids, 2 plates. Trans. Linn. Soc. xxvi.

R. Leuckart. Report on the contributions to the natural history of the Lower Animals for 1866–7. Wiegm. Archiv, xxxiii.

E. Metschnikoff. Observations on the development of certain animals. Bull. Imp. Acad. Sc. Petersb. xiii.

T. J. Moore. On the habitat of the *Regadera* (*Euplectella*). Ann. Nat. Hist. Ser. 4, iii.

A. M. Norman. Notes on a few Hebridean Sponges and on a new *Desmacidon* from Jersey. Ann. Nat. Hist. Ser. 4, iii.

P. Olsson. Entozoa observed in Scandinavian Sea-Fishes, 2 plates. Trans. Univ. Lund, 1866; and continuation, with 3 plates, *ibid.* 1867.

E. Parfitt. On the marine and freshwater Sponges of Devonshire. Trans. Devon Assoc. Sc. etc. ii.

A. Quennerstedt. Contributions to the Infusorial Fauna of Sweden, 2 plates. Trans. Univ. Lund, 1867.

F. Ratzel. Contributions to the anatomical and systematical knowledge of Oligochætæ, 1 plate. Zeitschr. wiss. Zool. xviii.

F. Ratzel and M. Warichawsky. On the history of the development of *Lumbricus agricola*, 1 plate. Zeitschr. wiss. Zool. xviii.

J. G. Tatem. On a new Melicertian and some varieties of *Melicerta ringens*, 2 plates. Journ. Quek. Micros. Club, i.

——. On a new Infusorium, 1 plate. Monthl. Micros. Journ. i.

L. Vaillant. On the anatomy of two species of *Perichæta*, and Essay on the classification of Lumbricinæ, 1 plate. Ann. Sc. Nat. Zool. Ser. 5, x.

G. C. Wallich. On Rhizopoda as embodying the primordial type of animal life. Monthl. Microsc. Journ. i.

E. P. Wright. Note on the animal of the Organ-pipe Coral, *Tubipora musica*, 1 plate. Ann. Nat. Hist. Ser. 4, iii.

Phænogamic Botany :—

J. E. F. Aitchison. On the Flora of the Hushiarpur district of the Punjab. Journ. Linn. Soc. Bot. xi.

T. Anderson. Enumeration of the Palms of Sikkim. Journ. Linn. Soc. Bot. xi.

S. Andy. On branched Palms in Southern India, 1 plate and woodcuts. Trans. Linn. Soc. xxvi.

F. W. C. Areschoug. Contributions to the history of the vegetation of Scandinavia. Trans. Univ. Lund, 1866.

P. Ascherson. On the forms of *Papaver alpinum*. Bot. Zeit. 1869.

A. W. Bennett. Note on the structure and affinities of *Parnassia palustris*. Journ. Linn. Soc. Bot. xi.

A. Bloxam. On *Rubus Briggsii*, 1 plate. Seem. Journ. Bot. vii.

— Böckeler. Remarks on the Cyperaceous genus *Anosporus*. Bot. Zeit. 1869.

T. R. A. Briggs. On some Plymouth *Rubi*. Seem. Journ. Bot. vii.

A. Brongniart and A. Gris. On the genus *Spermolepis*.—On the new genus *Pleurocalyptus*. Bull. Soc. Bot. Fr. xiv.

R. Brown's Miscellaneous works, edited by J. J. Bennett; plates, folio. From the Ray Society.

R. Brown. A monograph of the Coniferous genus *Thuja* and of the North-American species of *Libocedrus*, Florula Discoana. Trans. Bot. Soc. Edinburgh, ix.

T. Caruel. On the seeds of *Luzula*.—On the androecium of *Fumariæ*. Bull. Soc. Bot. Fr. xiv.

——. On *Cyclanthera explodens*, 1 plate.—Conspectus of Italian Polygalaceæ. Nuov. Giorn. Bot. Ital. i.

H. Christ. On the geographical distribution of the plants of the Alpine region of the great European chain, map. Trans. Helvet. Soc. Nat. Sc. xxii.

——. Remarks on the species of *Viola* of the east end of the Lake of Geneva. Trans. Nat. Hist. Soc. Basle, v.

D. Clos. On *Hypericum elatum*. Bull. Soc. Bot. Fr. xiv.

——. On the cultivated species of *Phlomis*. Bull. Soc. Bot. Fr. xv.

E. Cosson and Durieu de Maisonneuve. On *Kralikia*, a new genus of Algerian Grasses. Bull. Soc. Bot. Fr. xiv.

G. Dickie. Notes on a collection of plants from the N.E. shore of Lancaster Sound. Journ. Linn. Soc. Bot. xi.

— Duncan. Note on the stamens of *Saxifraga*. Journ. Linn. Soc. Bot. xi.

E. Fournier. On two new Mexican Asclepiadeæ. Bull. Soc. Bot. Fr. xiv.

J. Fourreau. Catalogue of the plants growing spontaneously along the course of the Rhone (Great multiplication of genera and species). Ann. Soc. Linn. Lyons, xvi.

T. R. Fraser. On the characters of the Akuzga plant (*Strychnos*?)

and the difference between the structure of its stem and that of *S. Nux-vomica*, 1 plate. Trans. Bot. Soc. Edinburgh, ix.

A. Gray. Characters of two new parasitic Gentianeæ (*Eophyton*). Journ. Linn. Soc. Bot. xi.

A. Grisebach. On the Grasses of Upper Asia. Nachr. R. Soc. and Univ. Göttingen, 1868.

L. Grüner. On the vegetation of the neighbourhood of Palna (on the Jeletz, an affluent of the Sossna, which flows into the Don). Bull. Soc. Imp. Nat. Mosc. 1868.

W. R. Guilfoyle. A botanical tour in the South-Sea Islands. Seem. Journ. Bot. vii.

H. F. Hance. Short notes on and descriptions of Chinese plants. Seem. Journ. Bot. vii.

H. Hoffman. Areas of plants in the countries about the Middle Rhine, 7 maps (from Proc. Upp. Hess. Soc. Nat. & Med. Sc.). Presented by the author.

J. D. Hooker. Handbook of the New-Zealand Flora, 1 vol. 8vo. Purchased.

C. Howie and C. Jenner. On a new *Carduus* in Ross-shire. Trans. Bot. Soc. Edinb. ix.

J. Kirk. On the Copal of Zanzibar. Journ. Linn. Soc. Bot. xi.

F. Kirschleger. On two species of *Allium* new to France. Bull. Soc. Bot. Fr. xiv.

C. Koch. Dendrologia, vol. i. Polypetalæ, 8vo. (Trees, shrubs, and undershrubs cultivated in the open air in Central and Northern Europe.) Presented by the author.

——. Two new species of *Anthurium*. Wochenschr. R. Pruss. Hort. Soc. 1868.

M. P. Lawson. On the Flora of Skye. Seem. Journ. Bot. vii.

E. Lebel. Morphology of the genus *Spergularia*. Bull. Soc. Bot. Fr. xv.

E. Lindemann. Supplement to the Florula Elizabethgradensis. Bull. Soc. Imp. Nat. Mosc. 1868, i.

E. Löw. On the structure of *Cassytha melantha*, Br. Trans. Zool. Bot. Soc. Vienna, xviii.

W. R. Macnab. On the structure of the stem of *Hedera Helix*, woodcut.

——. On the British species of *Delphinium*. Trans. Bot. Soc. Edinb. ix.

M. T. Masters. Passion-flowers, 1 plate. Pop. Sc. Rev. viii.

T. Meehan. On the varieties of *Epigæa repens*. Seem. Journ. Bot. vii.

K. Meinshausen. On the Flora of Ingria. Bull. Soc. Imp. Nat. Mosc. 1868, i.

Abbé Miégeville. Descriptions of Pyrenean Plants. Bull. Soc. Bot. Fr. xiv.

J. Miers. On Ehretiaceæ.—On the comparative carpical structure of Ehretiaceæ and Cordiaceæ. Ann. Nat. Hist. Ser. 4, iii.

F. A. W. Miquel. On the sexual Organs of Cycadeæ (from the Archives Néerlandaises). Seem. Journ. Bot. vii.

——. On plants of the Indian Archipelago: Meliaceæ, Ranunculaceæ, Dilleniaceæ, Magnoliaceæ, and Menispermaceæ, 1 plate; Teysmannia (Palms), 2 plates; Zingiberaceæ, 1 plate; Ternstrœmiaceæ, Burseraceæ, and Anacardiaceæ; Rubiaceæ, Apocyneæ, and Asclepiadeæ, 1 plate; Primulaceæ, Hippocrateaceæ. Ann. Mus. Bot. Lugd. Bat. iv.

R. Munro. On the reproduction and cross fertilization of Passifloras. Trans. Bot. Soc. Edinb. ix.

R. Nielreich. The Vegetation of Croatia, 1 vol. 8vo. Separately issued by the Zool. Bot. Soc. Vienna.

G. de Notaris. On the ligula of Gramineæ. Nuov. Giorn. Bot. Ital. i.

E. G. Paris. Herborizations in Algeria. Bull. Soc. Bot. Fr. xiv.

— Perrier de la Bathie. On the geographical distribution and origin of the Tulips of Savoy and the Valais.—On a *Ranunculus* (*Batrachium*) flowering under water. Bull. Soc. Bot. Fr. xiv.

V. Reboud. Notice of a botanical exploration of Hodna (Algeria). Bull. Soc. Bot. Fr. xiv.

E. Regel and F. v. Herder. Enumeration of Semenov's trans- and cis-Ilian Plants (continued), 1 plate. Bull. Soc. Imp. Nat. Mosc. 1868, i.

A. H. C. C. Scheffer. On some Euphorbiaceæ of the Indian Archipelago. Ann. Mus. Bot. Lugd. Bat. iv.

T. Schmidt. Travels in the Amurland and Sachalin Island. Botanical portion, 2 maps and 8 plates. Mem. Imp. Acad. Sc. Petersb. Ser. 7, xii.

G. Schweinfurth. New Æthiopian species of Plants. Trans. Zool. Bot. Soc. Vienna, xviii.

J. Shortt. On the branched Palms of Southern India, woodcuts. Journ. Linn. Soc. Bot. xi.

Count Solms Laubach. On Lemnaceæ. Bot. Zeit. 1869.

E. R. Trautvetter. Four new Russian Plants. Bull. Soc. Imp. Nat. Mosc. 1868, i.

E. Weiss. A new *Echinops*. Trans. Zool. Bot. Soc. Vienna, xviii.

A. Wesmael. Notes on Himalayan Poplars, supplemental to the sixteenth volume of De Candolle's Prodromus. Bull. Soc. R. Bot. Belg. vii.

W. Woolls. Contribution to the Flora of Australia, 1 vol. 8vo, 1867. Presented by the author.

Numerous short notes on the Scotch Flora, in Trans. Bot. Soc. Edinb. ix.; on the French Flora, in the Bull. Soc. Bot. Fr. xiv., xv.; on the Belgian Flora, in the Bull. R. Bot. Soc. Belg. vii.

Physiological, Applied, and Miscellaneous Botany :—

F. W. Areschoug. Researches on the anatomy of Plants; on the inner structure of leaves, 4 plates. Trans. Univ. Lund, 1867.

G. Bernoulli (Guatemala). Contributions to the knowledge of dimorphic Flowers.—Contributions to the teratology of Plants. Bot. Zeit. 1869.

R. Brown. On the vegetable products used by the N.W. American Indians as food, medicine, or in the arts. Trans. Bot. Soc. Edinb. ix.

J. Bullar. On the numerical law of Flowers. Trans. Bot. Soc. Edinb. ix.

T. Caruel. On the tendrils of the Vine. Bull. Soc. Bot. Fr. xv.

J. Chalon. Materials for determining the families, genera, and species by the anatomical study of stems. Bull. Soc. R. Bot. Belg. vii.

J. Gorham. On the composite structure of simple leaves. Journ. Microsc. Soc. 1869.

A. Guillard. On the motion and special seat of sap. Bull. Soc. Bot. Fr. xiv.

G. Henslow. On the variations in the angular divergences of the leaves of *Helianthus tuberosus*, 1 plate. Trans. Linn. Soc. xxvi.

G. Heyer. Geographical distribution of European Forest-trees (from Allg. Forst- und Jagd-Zeit.). Presented by the Author.

W. Hofmeister. On the passive and active recurving of roots Bot. Zeit. 1869.

Prof. Inzenga. On the cultivation of *Rhus coriaria* near Palermo, woodcuts (from Ann. Agric. Sicil.). Trans. Bot. Soc. Edinb. ix.

S. Karcltschikoff. On the plate-like thickenings of the cells of some Gramineæ, 1 plate. Bull. Soc. Imp. Nat. Mosc. 1868.

J. Kirk. On the Copal of Zanzibar. Journ. Linn. Soc. Bot. xi.

W. Lauder-Lindsay. On the value and applications of the leaf-fibre of *Phormium tenax*. Seem. Journ. Bot. vii.

H. Lecoq. On the spontaneous movements of *Colocasia esculenta*. Bull. Soc. Bot. Fr. xiv.

H. Leitgeb. Contributions to the history of the development of Plant-organs ; growth of the stem of *Fontinalis antipyretica*. Proc. Imp. Acad. Sc. Vienna, Nat. Hist. lvii.

W. R. Macnab. On the structure of the stem of *Hedera Helix*. Trans. Bot. Soc. Edinb. ix.

——. On the simple structure of compound leaves. Monthl. Microsc. Journ. i.

H. v. Mohl. On the growth in thickness of the stems of Dicotyledonous trees. Bot. Zeit. 1869.

A. Petounnikoff. On the formation of Manna. Bull. Soc. Bot. Fr. xiv.

E. Prillieux. On the curvatures produced on young shoots by shaking. Ann. Sc. Nat. Bot. Ser. 5, ix.

— Pringsheim. On the formation and development of the buds of *Utricularia*. Proc. R. Acad. Berlin, 1869.

J. B. Schnitzler. Observations and experiments on the motions of Stamens in the Barberry. Bull. Soc. Vaud. Sc. Nat. x.

P. v. Tieghens. On the anatomical structure of Aroideæ. Bull. Soc. Bot. Fr. xiv.

——. On the structure of the Pistil, 4 plates. Ann. Sc. Nat. Bot. Ser. 5, ix.

G. Uzzielli. On the botanical observations made by the painter Leonardo da Vinci. Nuov. Giorn. Bot. Ital. i.

H. L. de Vilmorin. On the fecundation of Maize as affecting the resulting fruit. Bull. Soc. Bot. Fr. xiv.

— Vogel. On the absorption of Silica by water-plants. Proc. R. Acad. Sc. Munich, 1868, ii.

Cryptogamic Botany.

J. G. Agardh. De Laminarieis symbolæ. Trans. Univ. Lund, 1867.

J. H. Balfour. On the spores of cryptogamic Plants and the reproductive process in some Algæ and Fungi (abstract). Proc. R. Soc. Edinb. 1867–8.

L. Berggren. Studies on the structure and development of Mosses: 1. *Andreæa*. Trans. Univ. Lund, 1867.

E. Bescherelle. On the structure of the stem in the tribe Bryaceæ, and especially in the genus *Philonotis*. Bull. Soc. Bot. Fr. xv.

E. Borscow. The Fungi of the government of Tchernigoff. Bull. Acad. Imp. Sc. Petersb. xiii.

R. Brown. On the nature of the discoloration of the Arctic seas. Trans. Bot. Soc. Edinb. ix.

M. C. Cooke. On the genus *Lophiostoma* of British Fungi. Trans. Bot. Soc. Edinb. ix.

——. Bunt spores. Journ. Quek. Microsc. Club, i.

J. Crombie. New British Lichens. Seem. Journ. Bot. vii.

G. Dickie. Notes on Mosses and Hepaticæ collected by R. Brown on the N.W. coast of America.—On Algæ of the same collection. Trans. Bot. Soc. Edinb. ix.

— Duval-Jouve. On the vascular system in Ferns. Bull. Soc. Bot. Fr. xv.

A. Famintzin and J. Boranetzky. On the change of the Gonidia of Lichens into Zoospores (from the Mem. Imp. Acad. Petersb. [above, p. xxii] through the Ann. Sc. Nat.). Ann. Nat. Hist. Ser. 4, iii.

E. Fournier. Note on some American *Acrosticha* of the *Pilosella* section.—On the genus *Aconiopteris* (Fern). Bull. Soc. Bot. Fr. xiv.

J. Fraser. Notice of *Amblystegium confervoides*, a new British Moss, 1 plate. Trans. Bot. Soc. Edinb. ix.

E. Hampe. On the family Neckeraceæ (generalia). Flora, 1869.

C. Howie and C. Jenner. On new and rare Mosses in Ross-shire. Trans. Bot. Soc. Edinb. ix.

K. Kalchbrenner. Diagnoses of some Hymenomyceta of the Hohenbühel-Heuflerian Herbarium. Trans. Zool. Bot. Soc. Vienna, xviii.

A. v. Krempelhuber. Exotic Lichens in the Botanical Cabinet of Vienna, 2 plates. Trans. Zool. Bot. Soc. Vienna, xviii.

— Kuhn. Analecta pteridographica. Bot. Zeit. 1869.

C. O. Kurz. Contributions to the knowledge of *Polyporus officinalis*, Fries, 2 plates. Bull. Soc. Imp. Nat. Mosc. 1868, i.

W. A. Leighton. Notulæ Lichenologicæ, continued. Ann. Nat. Hist. Ser. 4, iii.

H. Leitgeb. On the growth of the stem in *Fontinalis antipyretica*. Proc. Imp. Acad. Sc. Vienna, Nat. Hist. lvii.

W. L.-Lindsay. On chemical action as a specific character in Lichens. Journ. Linn. Soc. Bot. xi.

P. G. Lorentz. On the Mosses collected by Ehrenberg in Egypt and Syria in 1820–26, 15 plates. Trans. R. Acad. Sc. Berlin, 1867.

E. Milde. Index Botrychiorum. Trans. Zool. Bot. Soc. Vienna, xviii.

W. Miquel. On the Ferns of the Indian Archipelago. Ann. Mus. Bot. Lugd. Bat. iv.

S. S. v. Muggenburg. Mycological Miscellanies. Trans. Zool. Bot. Soc. Vienna, xviii.

A. Petounnikoff. On the reproductory organs of *Sphærocarpus terrestris*, 1 plate. Bull. Soc. Bot. Fr. xiv.

Abbé Ravaud. On some new Mosses found in Dauphiné. Bull. Soc. Bot. Fr. xiv.

M. Reess. On the natural history of brewers' yeast (*Saccharomyces cerevisiæ*). Bot. Zeit. 1869.

H. W. Reichhart. *Orthorhynchium*, a new genus of Mosses.—New Mosses collected in the Novara Expedition. Trans. Zool. Bot. Soc. Vienna, xviii.

E. Roze. On the germination of *Salvinea natans*.—On the fecundation of Selaginellas. Bull. Soc. Bot. Fr. xiv.

G. de Saporta. On *Asplenium Petrarchæ*, 1 plate. Bull. Soc. Bot. Fr. xiv.

J. de Segner. On some monstrosities in the higher Fungi, 2 plates. Bull. Soc. Bot. Fr. xiv.

W. G. Smith. New and rare British hymenomycetous Fungi, 1 plate. Seem. Journ. Bot. vii.

F. Stoliczka. Anatomy of *Sagartia Schilleriana* and *Membranipora benghalensis*, 3 plates. Journ. Asiat. Soc. Beng. n. ser. xxxviii. Phys. Sc.

E. Strasburger. On the fertilization of Ferns. Mem. Imp. Acad. Sc. Petersb. Ser. 7, xii., with 1 plate, and Ann. Sc. Nat. Bot. Ser. 5, ix., with 2 plates.

W. Tschomirow. *Peziza Kauffmaniana*, a new fungus arising from a *Sclerotium* and parasitic on Hemp, 4 plates and woodcuts. Bull. Soc. Imp. Nat. Mosc. 1868, i.

G. C. Wallich. Observations on Thalassicollidæ. Ann. Nat. Hist. Ser. 4, iii.

M. Woronin. Contributions to the knowledge of Vaucherieæ, 2 plates. Bot. Zeit. 1869.

Miscellaneous :—

O. Beccari. Nuovo Giornale Botanico Italiano, 8vo. Part 1. Presented by the Editor.

H. Christy and E. Lartet. Reliquiæ Aquitanicæ, part 8. Presented by the Executors of the late H. Christy.

Forest-Administration of India. Progress report for Mysore, 1865–1867. Presented by the Secretary of State for India.

L. Jenyns. Notes on the summer of 1868 as observed in Bath and compared to that of Greenwich (from Proc. Bath Nat. Field Club). Presented by the Author.

A. Murray. Journal of Travel and Natural History, to part 6. Presented by the Publisher.

W. P. Schimper. Traité de Paléontologie végétale, vol. 1, 53 plates. Presented by the Author.

R. Schomburgk. Report, as Director of the Botanic Gardens, Adelaide, South Australia. Presented by C. A. Wilson.

J. L. Soubeiran and A. Delondre. The Materia Medica of the Paris Exhibition 1867. Presented by Mons. Soubeiran.

MAY 24TH, 1869.

ANNIVERSARY MEETING.

GEORGE BENTHAM, Esq., President in the Chair.

This day, the Anniversary of the birth of Linnæus, and the day appointed by the Charter for the election of Council and Officers, the President opened the business of the Meeting with the following Address:—

GENTLEMEN,

MY chief object in addressing you at some length on the occasion of each Anniversary Meeting has been to give you a sketch of the gradual progress of our science from year to year, as the result in a great measure of the encouragement given to its pursuit by the establishment of scientific societies like our own in all the principal centres of civilization. A general survey, however, of the whole field, annually repeated, is more than I am able to accomplish, and might become tedious from its uniformity; and I therefore select, on the present occasion, one branch of the science, of comparatively recent origin, but which is daily acquiring greater importance in the eyes of the philosophical naturalist, I mean that of Geographical Biology.

For a general view of the geographical distribution and migration of species, of the bearing of the facts elucidated upon the history of the organized inhabitants of the globe, and rather more indirectly on its inorganic history, I cannot do better than refer to the second volume of Sir Charles Lyell's 'Principles of Geology.' In chapters 38 to 43 (10th edition) will be found a lucid sketch

of the conclusions to be drawn from the principal facts hitherto recorded in regard to all the great classes of organized beings; but the science is in many respects as yet in its infancy. There are districts of the globe which, though not of any great extent, are, however, in this respect of considerable importance, of which the vegetation or the fauna, or both, are as yet almost unknown; and there are many others of which the animals especially, although described in detail, have been scarcely compared with those of other distant or even adjoining regions. I shall therefore on the present occasion endeavour to point out what is the present state of our published knowledge of the geographical distribution of the great classes of plants and animals, with a view to calling the attention of the several students of each branch of the science to the numerous and wide gaps which it is desirable to fill up before any general conclusions can be regarded as firmly established. If amongst these observations I may be found to have repeated some which I had already laid before you in my addresses of 1863 and 1866, I have done so but very shortly and only when it appeared necessary for the exposition of the subject.

Following the inverse order of that adopted by Lyell, I shall commence with Plants—first because they are the most independent of other classes, and consequently the first occupants of new land, secondly because their distribution is the most complicated, and thirdly because it is that which has been the subject of the most detailed investigation.

1. The distribution of plants is, generally speaking (for all general biological propositions must admit of exceptions), more independent of other classes than that of animals. It has been well stated that the supply of food is one of the great causes regulating the diffusion of a race. Animals feed almost exclusively upon living animals or plants, or upon animal or vegetable matter not yet disorganized. Plants feed upon inorganic or disorganized substances; or if they generally or, perhaps, always require more or less of organic matter, it is that from which life has departed, and which is more or less in a state of decomposition, and may have lain dormant for ages. The habitation of plants is therefore more immediately and often more exclusively dependent on circumstances of soil, climate, and geological conditions than that of any other class of organized beings.

2. The distribution of plants is the most complicated. Fixed and immovable as is the individual plant, there is no class in

which the race* is endowed with greater facilities for the widest dispersion. Birds, with their enormous powers of rapid locomotion, who will at certain seasons traverse thousands of miles in search of food, return to their native haunts to rear their progeny. Plants cast away their offspring in a dormant state ready to be carried to any distance by those external agencies which we may deem fortuitous, but without which many a race might perish from the exhaustion of the limited spot of soil in which it is rooted. Modern or comparatively modern invasions from distant regions, to the more or less complete extinction or contraction of the original occupants, are much more frequent in the case of plants than of animals; and gradual changes of area as resulting from altered soil or climate are probably more general and rapid with stationary plants than with the most agile of animals. The recent experiments of Messrs. Lawes and Gilbert have shown how rapidly the numbers and proportions of the constituent species of a mixed vegetation may be altered by the slightest change in the chemical ingredients of the soil. And it is perhaps as much to this cause (that is, to the varied and complex means of distribution) as to greater antiquity that must be attributed that wider delimitation in the area of plants than of animals alluded to by Hooker (Introd. Ess. p. xii).

3. The geography of plants has been the subject of the most detailed investigation; for, besides the numerous older essays, it is the only branch in which we have a complete treatise previous to the promulgation of the Darwinian theories; and since then, in the application of those views to geographical distribution, botanists have been by no means in arrear of zoologists in the value of their contributions.

Alphonse de Candolle's 'Géographie Botanique Raisonnée,' published in 1855, the result of many years' research and study, as a general methodical exposition of facts and observations relating to the distribution of phænogamous plants over the surface of the globe, and their migrations, natural or artificial, is invaluable. The influences of soil and climate on the geographical limits of species and varieties, the changes effected by naturalization, or by culti-

* I use the word *race* instead of *species* as being more general and not entailing the precise determination of what is a species. Race, in the sense here used (that to which Haeckel gives the name of *phylon*), is equally applicable to the permanent variety, the species, or the group of species—any collection of individuals whose common characters are continued through successive generations.

vation, or other human agencies, the history of cultivated species, and many other minor points are treated of with an ability and care which will long maintain this as the standard work on these subjects. But with regard to the more general question of the natural causes which have influenced the present distribution a complete revolution in the science has been the consequence of the development of the Darwinian views, first published four years after the appearance of De Candolle's work. The ideas of the day on this part of the subject, however, are discussed by De Candolle in various points of view, and he comes to the conclusion that the present species were brought into existence, either in a single one or in a number of individuals, in one or in different localities, simultaneously or, more probably, successively, at a period or periods when the geological outlines of the surface of the globe were very different from what they are now, each species with characteristics and susceptibility of variation within definite limits essentially the same as those it now possesses. Admitting that species have become extinct in former times in the same manner as has been observed within the historic period, the new ones which have replaced them are supposed to have been created in a manner which no observation of actual phenomena can elucidate. These views, generally received by the great majority of naturalists at the time De Candolle wrote, and still maintained by a few, must, if adhered to, check all further inquiry into any connexion of facts with causes. Observations on the local habitation of groups of allied species, or representative species in distant localities, or the analogies and differences of distant floras, &c., independent of migration and climatological influences, become mere records of curious facts and coincidences, the results of an arbitrary exercise of a will inscrutable to the human mind. But now that the gradual admission of a derivative origin of actual species and of a consequent close connexion between affinity and consanguinity has given a real significance to these facts, there is little doubt but that if De Candolle were to revise his work, he would follow the example of so many other eminent naturalists, and give a totally different character to several of the last chapters of his second and third books, as he had already then been induced to take up some of the views of Lyell and Forbes, and to insist that the present geographical distribution of plants was in most instances a derivative one, altered from a very different former distribution.

There are a few other minor points upon which subsequent observations have required the modification of some of De Candolle's conclusions, and on which I should wish to say a few words before proceeding to the consideration of those works in which the Darwinian views of the origin of species have been applied to the explanation of the geographical distribution of plants. The points I allude to are:—1st, as to the means of dispersion; 2ndly, the stores of buried seeds; and 3rdly, the dissevered species.

1. *As to the Means of Dispersion.*—Detailed as is De Candolle's exposition of this subject, it would seem now to require considerable extension. Relying, for instance, upon seeds as almost the sole state in which plants migrate, he insists on the obstacles opposed to the transportation of aquatic plants to great distances—a circumstance which he has some difficulty in reconciling with the comparatively numerous instances they afford of widely dissevered species, omitting to notice that it is especially in aquatic plants that hibernacula or other reproductive buds have, like seeds, the faculty of remaining long dormant, and are equally susceptible of being transported to immense distances, of which the recent invasion we have witnessed of one sex only of *Elodea canadensis* is a striking example. That the transport of seeds or of reproductive buds by birds, insects, or other travelling animals had been much underrated has been shown chiefly by the observations of Darwin; on the other hand, some of the more obvious means of transport, depending on the peculiarities of the seeds, had perhaps been made too much of. Wings and pappi, the elastic dehiscence of fruits, &c. generally serve to carry the seeds to very short distances only (not more perhaps than sufficient to place them immediately beyond the baneful influence of their parents' roots or shades), and can very rarely be traced to have much effect on the general area of plants. In Compositæ, several species of *Eclipta*, *Elephantopus*, *Anthemis*, *Lapsana*, &c., without any pappus at all, have a much more wide-spread distribution than the great majority of Senecios, for instance, with their light seed and broad pappus; and if we observe that portion of thistle-down which has been carried to any considerable distance by a high wind, we shall generally find that it has left its seed behind. The adherence of burs to extraneous substances as facilitating their transport is correctly brought forward; yet it must sometimes be but a very small element in the variety of causes of dispersion. I cannot find, for instance, that any of the common bur-seeded Echinosper-

mums or Cynoglossums are at all more general or more rapid in their dispersion than the remarkably smooth-seeded equally common species of *Myosotis*.

And if the means of transport of plants are so infinitely varied and so constantly in action, so much more so than would have been imagined previously to Darwin's observations, the obstacles to their thriving when transported, are as infinitely varied and constant. The seed on being deposited must find a vacant spot, a soil to suit it, a degree of moisture and heat sufficient to stimulate it into growth before it is carried off or perishes, protection in its young or tender state after germination; it must in short survive its exposure to those numerous vicissitudes which will cause, for instance, an average of 99,999 out of every 100,000 seeds cast off by a native Foxglove to perish before reaching the reproductive age. Clouds of small light seeds, carried by dry winds and deposited on open soil suited for their growth, may, if in a period of drought, be all devoured by insects, birds, or other animals before a shower of rain shall have enabled them to germinate and fix themselves in the soil, whilst a single haw swallowed and afterwards cast off by a bird in an accidentally vacant spot in warm moist weather, with the seed sufficiently stimulated to start into immediate growth, or an acorn dropped by a rook on a ploughed field during the very short period that an acorn will germinate readily, may give rise to a young hawthorn or oak, such as those often observed to spring up in the west of England, many miles from any parent tree. The action and counteraction of the opposing influences are indeed so complicated as to reduce the successful naturalization of a plant to a mere chance, and that a remote one. The various causes by which American plants have become introduced into Europe had been in operation for centuries before they succeeded in establishing the *Elodea canadensis* above alluded to, notwithstanding its great constitutional facilities, as evidenced by the extraordinary rapidity with which it spread into almost every district of Britain across theoretically impassable barriers.

2. *Stores of Seeds.*—One consequence of the underestimation of the enormous extent to which the transportation, under ordinary circumstances ineffectual, of plants in a dormant state is being constantly carried on, has been the supposition that immense stores of seeds are lying buried at considerable depths ready to germinate when, after years or perhaps centuries, accident shall

have turned them up to the surface: "Il faut donc regarder la couche de terre végétale d'un pays comme un magazin de graines au profit des espèces indigènes" (DC. Géogr. Bot. 625). I treat this as a supposition, because, notwithstanding the almost universal belief in it as a fact, it seems to me to rest entirely on circumstantial evidence when direct evidence ought to be so easily attainable. I have never been able to find any record of a single instance in which these stores of seeds have been actually seen, although such seeds are by no means microscopical. The chain of reasoning that has led to the conclusion seems to be this:— Soil, when laid bare by a railroad-cutting, extraordinarily deep digging, or ploughing, &c., will often get covered with a vegetation different in proportion, or even actually different in species, from that of the surrounding country; we cannot see how the seed can have been brought, and therefore it must have been in the soil; moreover, vegetable matter is long in corrupting when deeply buried, and on the other hand, seeds have been known to vegetate when more than a century old, and therefore there is nothing improbable in buried seeds retaining their vitality for any indefinite period. But it appears to me that neither the premises laid down nor the conclusions drawn from them are free from objection. If the decay of vegetable matter is retarded by deep burial and consequent diminution of the corrupting influences it is exposed to when near the surface, still the only condition in which its indefinite preservation is possible is perfect desiccation, which it does not acquire in the soil. The hundred- to a-hundred-and-fifty-year-old seeds which have germinated had been well dried and constantly preserved in the dry atmosphere of a museum. For those buried in the soil, it is difficult to conceive that many revolutions of the seasons should pass without more or less stimulating them into growth or inducing corruption or infiltration of inorganic matter destructive of their vitality. All experiments have shown that in a parcel of old seeds, however preserved, the longer they are kept the fewer among them have retained their vitality; and if from any long-buried store a single spadeful of turned up soil were to produce a crop of young plants, the dead seeds accompanying the still living ones must be far too abundant to escape observation. At the same time we have no right to deny that these stores of ancient seeds, dead and alive, may exist; but it is hard to believe in them without direct evidence, which we cannot too strongly recommend naturalists who have the opportunity to

search for*. I should add, however, that I am well aware that the mud at the bottom of a well or pond may often contain a considerable quantity of good seed; but that had most probably been but very recently deposited; and even there I doubt much whether many, if any, seeds could remain a whole twelvemonth without being devoured or stimulated into growth or corruption.

3. *Dissevered Species.*—De Candolle has collected a considerable number of curious and interesting facts as to dissevered species (espèces disjointes); but this important part of the subject requires great extension, founded upon the far more numerous observations which have since been made, and more especially by the inclusion of somewhat higher groups than the species in the very restricted modern sense of the term. Dissevered, so-called representative species, or clusters of species with a close natural connexion, so aptly taken into consideration by Hooker, A. Gray, and a few others, conduce much more to the general history of distribution than precisely identical forms scattered over distant parts of the globe; for the latter, although proved to be much more numerous than De Candolle had supposed, often suggest a comparatively recent dispersion by some of those waifs and strays, which I trust we shall not be called upon to designate by the barbarous law terms "jetsam and flotsam" now attempted to be introduced even into Wallace's last work. By the old doctrine, indeed, of separate and perfect creation of every distinguishable race, the slightest difference observed between two similar forms found in distant parts of the globe was considered sufficient to show them to be distinct creations, and therefore beyond the pale of discussion as to origin. But viewed under the new lights thrown upon the field by the Darwinian observations and theories, if the broken areas of absolutely identical subspecies or varieties still suggest in many cases a comparatively modern transportation, yet such facts as the representation of the eastern North-

* Hitherto direct observation has, as far as I am aware, only produced negative results, of which a strong instance has been communicated to me by Dr. Hooker. In deepening the lake in Kew Gardens they uncovered the bed of an old piece of water, upon which there came up a plentiful crop of Typha, a plant not observed in the immediate vicinity; and it was therefore concluded that the seed must have been in the soil. To try the question, Dr. Hooker had six Ward's cases filled with some of the soil remaining uncovered close to that which had produced the Typha, and carefully watched; but not a single Typha came up in any one of them.

American *Illicium*, *Schizandra*, *Menispermum*, *Caulophyllum*, *Thermopsis*, *Podophyllum*, *Amphicarpæa*, *Apios*, *Penthorum*, *Hamamelis*, *Diervilla*, *Phryma*, *Pyrularia*, and numerous others, in North-eastern Asia—of the Mexican or Californian *Microlotus*, *Hoffmanseggia*, *Strombocarpus*, *Melasma*, *Chorizanthe*, *Oxytheca*, &c. in extratropical South America—of the Andine *Caltha*, *Drimys*, *Colobanthus*, *Acæna*, *Eucryphia*, *Fuchsia*, *Gunnera*, *Azorella*, *Huanaca*, *Crantzia*, *Abrotanella*, *Pernettya*, *Gaultheria*, *Ourisia*, &c. in New Zealand, Tasmania, or Victoria—of the Tropical-African *Cadaba*, *Cochlospermum*, *Polycarpæa*, *Adansonia*, *Melhania*, *Zygophyllum*, *Cassiæ pictæ*, *Pterolobium*, *Erythrophlœum*, &c. in Australia—the three forms of *Wulfenia*, each with restricted areas in Carinthia, Asia Minor, and the Himalayas respectively—the three slight varieties of the Cedar in the Himalayas, the Lebanon, and the Atlas mountains—the identical *Pinus excelsa* and *P. Peuce* in the Himalayas and in the Scardus chain—and innumerable similar facts already recorded give one a considerable insight into the earlier history of the globe, suggesting community of origin at periods when more or less of the now impassable barriers cannot have existed. Connexions even still more ancient might be suggested by taking into consideration the representations of still higher groups, such as that of the Restiaceæ, Proteaceæ, Ericaceæ, Diosmeæ, &c. of South Africa, by different yet corresponding groups in Australia.

The data furnished by our herbaria and records for the investigation of the relations of these and similar dissevered species and groups of species are now very considerable; but they have only in a very few instances been collected and methodized, and it appears to me that it would be a most useful as well as interesting study for young monographists to take up any large natural and widely spread genus or other group, compare its natural with its geographical subdivisions, from the subgenus down to the species or variety, ascertaining the diversity of value and combinations of individual characters in different countries, the influence of physical conditions upon abundance or scarcity of individuals, on variability or distinctness of subordinate races, on permanency or evanescence of accidental abnormities, &c. The comparison of a number of such monographs compiled under different aspects from different groups of plants would, I have no doubt, tend to clear up some portion of the darkness which hangs over the history of vegetation.

I must add, also, that with regard to the practical usefulness of a work like De Candolle's, recording facts of detail so numerous and varied, it is in some measure marred by the want of any index beyond that of species referred to. This could be easily added in any future edition; and no better model can be followed than the copious indexes to the principal works of Lyell and Darwin.

After De Candolle, independently of the great works of Darwin, to which I more fully adverted in my Addresses of 1863 and 1868, the first important addition to the science of geographical botany was that made by Hooker in his Introductory Essay to the Flora of Tasmania, which, although contemporaneous only with the 'Origin of Species,' was drawn up with a general knowledge of his friend's observations and views. To the general principles laid down in the §§ 2, 3, and 4 of the Essay I believe that the majority of philosophical botanists have gradually given their hearty concurrence, although some of the minor propositions, or rather suggestions, may now require slight modifications, which would probably be acknowledged by Hooker himself, considerable progress having been made in the science during the ten years that have elapsed since the publication of the work. I believe, for instance, that what is said of the relations of varying and unvarying species to complexity of structure, to large and small genera, &c. is not entirely borne out by further observation. Degree of variability appears to me, like other constitutional characters, in the first place an individual one, which, if developed by external conditions, may become more or less hereditary, and therefore specific, and thence, but in a very faint degree, generic, although it may be developed in an extraordinary degree in any genus which contains species of a constitution which can in other respects live under the conditions favourable for promoting variability—to which I shall presently have again to recur. Among the three comparatively stable genera instanced by Hooker (*Veronica*, *Campanula*, and *Lobelia*), the New-Zealand shrubby Veronicas, nearly the whole of the Australian species of the same genus, the European *V. spicata*, *V. teucrium*, and their allies, the *rotundifolia* set of Campanulas, the South-African Lobelias, the American *Siphocampylus* set of *Lobelia*, if worked out in the same spirit, would show forms as inextricably varied and connected as our Roses and Brambles; and here, again, we have such species as *Rosa berberifolia*, *Rubus chamæmorus*, &c.,

which, under present circumstances, are as distinct and stable as any *Veronica*, *Campanula*, or *Lobelia*.

As to comparative complexity and progressive development, the perplexities of the doctrine, and the variety of conclusions which the same facts may be made to support, are well exposed by Hooker (Essay, p. xxiv); but the question has since then undergone considerable discussion. Some of the prevailing notions on the subject have been combated by Haeckel, Delpino, and other continental followers of Darwin; and an excellent general view of progressive development as it has hitherto been revealed to us is given by Lyell in the ninth chapter of the above-mentioned tenth edition of his 'Principles of Geology.' All that it is necessary for me to recall to your minds on the present occasion is this:—there seems to have been a very prevalent, though vague, notion among naturalists of a gradual progression—by variation (according to some who class themselves as the followers of Lamarck or of Darwin), or by improved creations in substitution of extinct races (according to the advocates of immutability)—among plants, from the simplest Acotyledons, through the more complex ones, to Monocotyledons, and thence to the highest Dicotyledons, placed by some in Ranunculaceæ, by others in Compositæ,—among animals, from the Protista of Haeckel, through the Vermes, Mollusca, Insects, and other Invertebrata, to the vertebrate Reptiles, Fishes, Birds, and Mammalia, culminating in Man. But if this doctrine of progression is correctly to be deduced from the facts observed, it must be taken with considerable qualification. It must not be supposed that the present races of plants or animals, showing the highest organization, have necessarily gone through, as a stage in their existence, any of those simpler forms now exhibited to us—that our present fungi or mosses have produced our present Monocotyledons, or that these, again, in their turn, have ever turned into Dicotyledons. On the contrary, it may, perhaps, be safely assumed that if every existing confirmed race—class, genus, or well-marked species—be a modification (a progressive one, if we remember that progression is relative, not absolute) of another, it is generally of a preexisting, not of a coexisting one. It has been especially urged by Hooker that when two races have diverged so as to become fixed species—to have lost the power of interbreeding—they have both become so altered that the one will no longer precisely reproduce the other. It cannot therefore be said generally that existing races are the

result of any progression from other existing races now going on, although every one may have been a progression from a previous one. And this progression may have been gradual or abrupt, very ancient or comparatively recent, according to the individual race. Variability and variation, progression, degeneracy, and duration, differ enormously in races as in individuals, according to the very complicated relations of external conditions, physical or social, with internal constitution. Observation leads to the conclusion (although I can adduce no positive proof) that some marked hereditary varieties are produced, in wild as in cultivated plants, which after a few generations disappear from no other cause than a deficiency in the numbers of individuals necessary to overcome the constantly recurring causes of destruction to which they are exposed, whilst others continue for ages increasing in numbers and powers, without any definite limits, till they at length receive a check, and finally succumb. Lyell shows us how some races in former periods had in the course of ages progressed to a more gigantic size, or to "a higher grade than any of the same class now living," and have yet become totally extinct. Others again, especially amongst those mollusks and insects of which fossil and recent specimens are identical, or plants of long-dissevered or isolated areas, have evidently remained unchanged through the countless ages separating distinct geological periods. This diversity in constitutional as well as circumstantial variability must be ever kept in mind in considering the causes of the present distribution of the so-called regions of vegetation and specific centres.

These "regions of vegetation" and "specific centres" have long been an object of study on the part of botanists. The proposition that every country has its own peculiar flora, and that every species has its own peculiar range, is the natural conclusion of even very superficial observation; and numerous attempts have been made to define and characterize natural botanical regions, in contradistinction to the politically limited territories usually taken as the areas of floras. That which has generally been received as the best was published by Schouw in the eighth volume of the 'Linnæa,' 1833; and an enumeration of several others, including one I had myself proposed at about the same time as Schouw's, is given by A. de Candolle in the twenty-fifth chapter of his 'Géographie Botanique,' where he has well pointed out the complicated way in which the various floras are intermixed by mu-

tual encroachments, and the consequent impossibility of giving to any such regions any definite limits. The attempt has, however, been renewed, in Petermann's 'Mittheilungen,' by Grisebach, to whom we are indebted for several valuable papers on geographical botany, especially his reviews of its progress. The globe is here mapped out into twenty-four botanical regions, based on actual physical and climatological considerations, entirely neglecting regions founded on origin and history, or, as he still terms them, centres of creations, which he observes are far too complicated to be capable of distribution into regions. Such, however, appears to be the case also with the physical regions of vegetation; they will be found to be often as confused in broken districts, as vaguely limited when extending more uniformly over vast territories, and as abruptly determined by impassable oceans or other barriers as the areas from origin. The floras of the Arctic and the Mediterranean regions, of the White and the Black Seas are no doubt very different; but the change is so gradual, the journey from beyond Archangel to Yalta in this respect so monotonous, that it would be impossible to fix within a hundred miles or more the line where you have left the frozen North or crossed the limits of the European, Siberian, and the Steppe regions, or entered that of the balmy South. So, again, the differences between the floras of Portugal and Dalmatia, or of King George's Sound and Moreton Bay, included respectively in the same regions, are surely greater than between those of Central Spain and of Central France, or of Timor and the opposite Australian coast, which are separated into different regions.

There can be no doubt, however, that there are regions of vegetation depending on physical and climatological considerations, which influence chiefly the areas of individual species or varieties —and botanical regions depending on community of origin, which affect the distribution of higher races, groups of species, or genera. By the combined effects of these two agents, wherever the uniform action of the one upon the other has been promoted by the long continuance of geological repose and maintenance of impassable barriers, so many species, genera, or even natural orders have been gradually produced or introduced and maintained in certain territories, whilst they have never appeared or have become extinguished in others, as to have given to every territory or district a special botanical character; and thus real regions have been formed exceedingly unequal in size, definiteness of circumscrip-

tion, and intensity of specialization (distinctness of character), but which it is very instructive to study and compare, and must, therefore, be named and described. We must also admit that every race has probably been the offspring of one parent or pair of parents, and consequently originated in one spot; but we must also insist that it may have been widely spread for years or ages before it became finally differentiated—perhaps under conditions and in countries different from those which gave it birth—and that the idea of general centres of creation whence the whole flora of a region has gradually spread is a perfect delusion.

The origin of vegetation, of the great races of plants, is at present so completely beyond all record, that I need say nothing of any attempts made to trace it out hypothetically; but, starting from some ancient era, such as that of the Upper Cretaceous (when Lyell tells us that "the principal classes and orders of the living vegetable creation are fully represented," the combined researches of geologists and biologists may throw considerable light on the birthplace, as well as on the comparative ages and migrations, of many of the subordinate races, groups of species, species, or varieties. If most of the general types or races (classes and orders) were the same then as now, some even of these existed which are now extinct, and some of those of the present day may not yet have been formed; as we descend in the scale of subordination, we find the extinct and newly formed races (genera) bear a greater proportion to the persistent ones; and descending to species and varieties, we find nearly the whole of the old ones replaced by new forms, although, even as to species in the most limited sense, some few may have preserved their identity. From that day to this, races in general have been ever varying in numbers and in distribution, as in character and constitution, according to laws which are probably constant, but are so complicated as to render it exceedingly difficult to trace them and oblige us often to designate them as mere chance. Some, endowed with special powers of multiplication, sexual or gemmaceous, or both, having been born in or brought into a region specially suited to them, or having, with other constitutional properties, the faculty of adapting themselves to a great variety of conditions, physical or social, will extend slowly or rapidly over immense areas, mixing in with or overpowering the preexisting vegetation, and maintaining themselves in vast numbers till, after years, or ages, or geological periods, slight physical changes, diminution in the supply of their food of

predilection or other alterations in external conditions, or possibly even internal constitutional decay may turn the nicely balanced scale, check their progress in the general struggle, and oblige them, more or less, to succumb to new competitors, to take refuge in isolated spots where they find special natural protections against their enemies, or finally to disappear altogether from the scene. Others, again, which, by their constitutions, multiply slowly, and are special in their requirements as to external conditions, but have at the same time great tenacity of individual life, may, if once placed in broken ground, with fewer enemies and greater protection, maintain themselves in few individuals in isolated spots through untold ages, unchanged in station, and unaltered in character. It is the comparative success of the above two classes, the rapidly propagating and the individually durable, in the great struggle between the new and the old, which gives to the species or variety a general or a local area, which stamps the vegetation of a region with a comparatively uniform and cosmopolitan, or a highly varied and endemic character.

I would also observe that if these individually durable slowly propagating races have comparative advantages in broken ground with small areas separated by impassable barriers, it is also probable that even in vast and more uniform territories a few of them may maintain themselves amongst, and even outlive, the rapidly propagating races, and thus preserve to us in or near their original stations a few scattered remnants of a generally extinguished vegetation. It is chiefly from the above considerations that I would regard territories containing a large proportion of highly differentiated endemic species not so much as centres of creation, but rather as areas of preservation, a character given to them quite as much by great antiquity of physical features not very different from the present ones as by isolation. Isolation may be an important element in the fixation of a race, but not an indispensable one, and may take only a subordinate part in its maintenance when fixed.

The great repartition of the races inhabiting the globe into from three to five geographical types proposed by several modern zoologists does not seem to have been, as yet, taken up by botanists beyond the few general indications given by Hooker and others. But in this respect it will probably be found that the great botanical and zoological regions coincide in their general disposition, if due allowance be made for the greater antiquity, as

well as for the greater facility of dispersion enjoyed by plants over the higher animals. A Northern type, with its acicular-leaved Coniferæ (Nadelholz), Amentaceæ, Ranunculaceæ, Cruciferæ, Trifolieæ, and other herbaceous races, spreading over Europe, Northern and Central Asia, and a portion of North America (long since broken into two by the irruption of the North Pacific Ocean and the upheaval of the Rocky Mountain chain),—a Tropical type, with its arborescent Polypetalæ and gigantic Monocotyledons, still longer separated into the American and Asiatic,—and a Southern type connected in remote ages by its Restiaceæ, Proteaceæ, Ericaceæ, single-leaved Papilionaceæ, Diosmeæ, &c., but long since differentiated by the total want of identity in the subordinate races of these identical higher ones, as well as by the exclusive abundance of Myrtaceæ and many smaller groups in the Australian portion, seem more or less to agree with the North and South divisions of Huxley, with the East and West of Sclater, and with the three Hauptfaunen of Gabriel Koch.

In the northern type there seems to be some evidence of an ancient continuity of vegetation with gradual change from Eastern North America to Eastern North Asia, something analogous to that now observable from Eastern Asia to Western Europe. Since the disruption above mentioned, that divergence of floras once identical which distance alone will produce even without dissevérance, has increased by isolation. Asia has preserved some few American races, especially in Japan, Mantschuria, and the Himalayas, which, like the *Phryma*, have maintained their absolute identity ; a larger number have slightly altered, so as to produce those geographical varieties, or representative species, so ably compared by Asa Gray. Races of a higher order, genera like *Astragalus*, have multiplied largely in both divisions, retaining some identity in the high northern and Alpine species, with a greater divergence in the temperate and warmer portions of their respective areas, which have probably been longer dissevered, or into which the genus may have independently spread in the two hemispheres without further communication. Other genera, like *Eupatorium*, *Aster*, *Phlox*, *Solanum*, &c., very numerously represented in America, have transmitted or produced a smaller number in Eastern Asia, gradually diminishing westward till they disappear altogether or attain Western Europe in single species but little altered from American ones. The Europeo-Asiatic genera, on the other hand, our *Cruciferæ*, *Caryophylleæ*, *Loteæ*, *Umbelli-*

feræ, &c., which have increased so largely on this side of the Pacific, appear to have left but few representatives in America, and those much more modified than the American races left in Asia. This part of the subject requires, however, much further investigation of detail before any really plausible conclusions can be drawn.

Where the chief portion of this great northern flora originated, and whether it may best be termed Scandinavian, or North Asiatic, or Caucasian, is a question for the determining of which we have little or no data; but, as observed by Hooker, it is probably one of the most ancient and widest spread, having at different epochs travelled over a great part of the globe. Shown by the researches of Lesquereux (quoted by A. Gray), as well as by the recent ones of Heer and others, to have extended far north during the warmer preglacial times, it must have been slowly driven southward as the glacial epoch came on, and either then or at some one or more other periods have been for a time continuous, in two lines at least, into the southern hemisphere; for it has left traces still discernible, especially in its herbaceous and mountain-forms, in the mountains of Tropical Asia, down at least to the Indian peninsula, and westward to the Abyssinian and Cameroons mountains of Africa, and, again, down the Andes to the extreme south of America, where it is still luxuriant, and in a less degree in New Zealand, Tasmania, and Victoria. In all these migrations, whilst retaining a general identity, the flora must have undergone continual changes, losing species or other races of limited areas and propagation as their habitations became unfit for them, and gradually forming new ones when favoured by long-continued isolation or other requisite conditions.

Besides the above-mentioned great disseverance of this flora east and west of the Pacific, physical and climatological conditions have by their long duration, acting in concert with genetic causes, produced three marked secondary types—the cold or Alpino-Arctic, the hot or Mediterraneo-Caucasian, and the intermediate or temperate—the two former with a large number of locally restricted individually persistent species with evidence of great antiquity in their present stations, the temperate with a much more uniform and widely spread flora, in many places evidently comparatively recent or so-called derivative.

Of these three, the Alpino-Arctic, the most striking in its features of wide dispersion and great disseverance, has been recently

the subject of several essays, of which the most important for the thorough investigation of details and application to general conclusions is Hooker's essay on the Arctic Flora, in the twenty-third volume of our Transactions, 1860, to which nothing of importance has since been added relating to the purely Arctic portion of the region, the only portion which still retains a certain degree of continuity. But here also we are clearly shown, in the instance of Greenland, the striking results of comparative isolation, causing it to lose so much during the advent of the glacial period and to regain so little since its retreat.

Another valuable paper, on the distribution of the Alpine Plants of the great European Chain from the Carpathians to the Pyrenees, was published in 1865 by Dr. H. Christ, of Basle, in the twenty-first volume of the 'Neue Denkschriften' or 'Nouveaux Mémoires' of the Helvetic Society of Natural Sciences. In a Table of 693 Alpine species (species most abundant above the limits of the wooded region, a definition not in all cases strictly adhered to) he shows, in 28 columns, their presence or absence in the eastern, central, and western Alps in eight Northern regions, European, Asiatic, or American, in six Central Asiatic ones, in five Central and Western ones, and six Mediterraneo-Caspian ones, prefacing the Table with the varying general considerations suggested by it. He does full justice to the value of Hooker's Essay, and in some respects follows his example. His species are generally taken in a more restricted sense than Hooker's; but in Tables of this kind the distribution of marked varieties, or the lowest order of races that have become tolerably fixed, is in some respects as instructive as that of higher ones, provided some kind of uniformity be preserved in their appreciation. He takes up Hooker's expression that, "regarded as a whole, the Arctic flora is decidedly Scandinavian," objects to the name of Scandinavian being given to the whole flora, as well as to the arbitrary limits adopted by Hooker for the area of his investigations, interfering with any direct comparisons between the two Tables—Hooker's and his own. But Christ treats of a region of which the chief interest lies in its actual comparative definiteness as a whole, as well as in the isolation of some of its divisions, and he had only to seek for its natural limits. Hooker's region was, on the contrary, limited by one of the special objects of the paper, the illustration of the results of the Arctic voyages, and is mainly instructive from its comparative continuity and uniformity and still existing connexion with other and more varied

regions. He had no actual boundary-line assigned to him, physical or climatological, in Europe, Asia, or America, and could only have recourse to an arbitrary one. Taken within these limits, Scandinavia presented the greater number of species which appear to have existed in their present abodes for the greatest length of time, and was therefore regarded as the best type of the general flora. It would, according to older rules, have been regarded as the centre of creation for the Arctic lands, and may now be termed the chief centre of preservation within the Arctic circle, owing perhaps partly to its more broken conformation, and partly to that warmer climate which, while it now admits species which Christ objects to being included in the Artic flora, was, during the glacial period, a means of preservation of some colder species which were everywhere else expelled or destroyed.

Christ alludes to the evidences of an alpine communication between the Pyrenees and Scandinavia, separate from that which formerly existed between the northern regions and the Alps. I had referred to the same point, in a paper on the geographical distribution of British plants, read to you in the winter of 1858–9, but afterwards withdrawn in consequence of the publication of Darwin's 'Origin of Species.' It appeared to me that many facts showed separate communications between the north and each of the three chains of the Pyrenees, the Alps, and the Himalayas, whilst these three gave little evidence of any lateral communication of their respective alpine vegetations, and a still greater alpine isolation was shown by the Auvergne mountains and by the Caucasus, intervening between the three great chains. Whether the African portion of the cold northern vegetation came from west Europe or from Asia may perhaps be further elucidated when the vegetation of the range of the Morocco Atlas becomes known.

The flora of a limited portion of the Arctic region, that of Spitzbergen, has been compared with that of a few perfectly isolated high alpine spots in the Alps and Pyrenees by Charles Martins in an interesting paper entitled "La végétation du Spitzberg comparée a celle des Alpes et des Pyrénées," published in the sixth volume of the Memoirs of the Academy of Sciences of Montpellier, 1865.

The history and relationship of the Scandinavian flora to that of the northern region generally, has been further worked out by Areschoug in a detailed paper published in the Transactions of the University of Lund for 1866, and by N. J. Andersson in an

essay on the vegetation of Sweden, of which I have not met with the original, but of which the greater part has been translated in the 7th vol. of the 5th series of the Annales des Sciences Naturelles. The conclusion of Areschoug, in which he is mainly followed by Andersson, is, that the Arctic flora which prevailed over the Swedish peninsula towards the close of the glacial period, has gradually retreated into Northern and Alpine Scandinavia, and in some respects is still retreating, and that the greater part of the present flora of Central and Southern Scandinavia consists of an eastern and north-eastern vegetation which spread into Europe after the glacial period and before the beech-tree had invaded Sweden, with the admixture of more southern species which, with the beech, have since penetrated into Sweden through Denmark.

Numerous dissertations on the geographical areas of plants in more restricted portions of the great northern area have entered more or less into general questions. Several of these are well reviewed by Grisebach in the volume for 1868 of the Gotha Geographische Handbuch. The reviewer, however, seems still to believe in centres of creation (or of gradual formation) indicated by endemic species, from whence the flora of a region has emanated; and he is disposed to admit dissevered species as evidences of a former wide range or communication, only when the species are perfectly identical, entirely putting out of the question distant nearly allied plants or representative species, of which he attributes the similarity to similar physical and climatological conditions.

The instruction to be derived from representative species, from races of a higher order than species in the present limited sense, represented in two distant countries with an enormous intermediate break, is admirably illustrated by Asa Gray in a remarkable paper on the Flora of Japan, in the sixth volume, new series, of the Memoirs of the American Academy of Arts and Sciences. This essay (completed and, I believe, actually published) before the appearance of the 'Origin of Species,' was written, as to the general matter at least, with the knowledge of Darwin's views as given in the preliminary sketch published in our Journal (Zoology, vol. iii.) and quoted by A. Gray, p. 443; and nothing, to my knowledge, has since been observed to invalidate the conclusions there suggested as to the origin and phases of the connexion I have already alluded to between Japan and East North-America on the one hand, and with Asia on the other. Miquel, after conclu-

ding his 'Prolusiones Floræ Japonicæ' has published two papers (in the Verslagen en Mededeelingen of the Royal Academy of Sciences of Amsterdam for 1866, and in the Archives Néerlandaises for 1867) on the relations of the flora of Japan with that of other countries. From researches subsequent to A. Gray's essay, he has been able to give more extended lists of plants identical with those of the Asiatic continent, but rather underrates the connexion with E. North America, owing to his entire neglect of any but absolutely identical species. He alludes to the Beech and Chestnut as common to Japan and western Asia or Europe, with the intervention of a great break, and enumerates a few other species dissevered between Japan and the countries west of the Oural. The latter appear, however, to be plants which may have been introduced into Japan by modern means; and the Beech and Chestnut have certainly, in Temperate and Southern Europe, rather an eastern than a western character, Nothing, indeed, in Miquel's paper appears to oppose the suggestion of A. Gray, which had also occurred to myself, but which as yet rests on very insufficient observation, that races of plants have in general a greater tendency to migrate from east to west than from west to east. A somewhat similar view is suggested by Grisebach in his above-mentioned paper on the regions of vegetation in Petermann's Mittheilungen, and may be connected with the earth's revolution round its axis, of which the influence on the course of Siberian rivers has (as I learn from Dr. Hooker) been suggested by Von Baer.

One result to be drawn from Miquel's papers, is that Japan, with its great diversity of climate, extending over more than thirteen degrees of latitude, its broken conformation, and probably great antiquity, shows in its numerous endemic species that it is a great centre of preservation for species of the great northern, and also of a portion of the Asiatic tropical vegetation. Another great centre of preservation of the northern flora may be traced in several parts of the Mediterraneo-Caspian region, especially on the southern declivity of the Alps, the rugged ranges south of the Caucasus, etc.

The geography of the two great branches of tropical vegetation, the Asiatic (from N.E. Australia to the Himalaya and Japan) and the American, is of the highest interest, but has not been yet worked out in a general point of view. The materials accumulated in our herbaria are considerable; but no flora of any tropical country of any extent has yet been completed. Miquel's flora of Dutch India is too vague and irregular as to the admission and exclusion

of species, as well as to their critical estimation, to be of much use for geographical purposes; and Thwaites's excellent enumeration of the plants of Ceylon relates only to an isolated portion, the chief interest of which would lie in the comparison of its very rich vegetation with that of other portions of the Tropical-Asiatic flora, which has not yet been made. Martius's great Brazilian Flora is scarcely half completed, and the first parts are already above twenty years old,—besides that the different authors have very different ideas of the value of species. No general comparison of Asiatic and American tropical vegetation can therefore be made without immense labour of detail. As far as we know, however, the resemblance between them is only in some of the races of a higher grade, natural orders, and comprehensive genera; the smaller genera and species, and many even of the higher ones, are totally different; or, if a few species are identical, they are generally, if woody or arborescent, such as *Entada*, *Gyrocarpus*, etc., wholly or partially maritime, and may have traversed the ocean during its present configuration, or, if herbaceous, widely spread weeds, still more likely to be spread all round the tropics under existing conditions.

The great puzzle of tropical vegetation is that of Africa, which appears to be of great antiquity and to have preserved a large proportion of individually persistent species, forming connecting links between races which have widely diverged in Asia or in America or in both. As our knowledge of the vegetation of Tropical Africa has increased, we have discovered a greater number of Asiatic types; but still there are, even in the interior, a certain number of American ones, offering a problem the solution of which has scarcely been attempted; nor will much probably be done before the completion of the important Flora now in course of publication by Oliver and others.

The temperate and colder floras of the southern hemisphere, and their geographical connexion, have been much more completely elucidated, chiefly in Hooker's three great southern Floras and their introductory essays, and, in respect of materials for consultation, the far advanced (though as yet incomplete) Cape Flora of Harvey and Sonder and the 'Chloris Andina' of Weddell. The principal types here exhibited may be classed as follows:—

1. An Andine flora, which, with a few members of the great northern type, but with a larger number of genera of its own, *Fuchsia*, *Gaultheria*, *Calceolaria*, *Ourisia* and many others, ranges more or less along the whole chain, shortly interrupted at present by the

depression in Central America, but penetrating, in some species, far northward in Western America, throwing off a few branches even into Eastern Asia, and at its southern extremity crossing over to New Zealand and, in smaller numbers, to Tasmania and the mountains of Victoria.

2ndly. A less cold but still extratropical vegetation, few in numbers, but often represented at great distances by closely allied species of small distinct genera—in Mexico and California, in the Argentine States and in S. Africa or Australia—there being more nearly allied species between N. Mexico and the Argentine States, or between the latter and S. Africa or Australia, than there are between the two latter.

3rdly. The well-known Australian flora, almost endemic, showing some slight connexion with New Zealand and a few remains of former ramifications northward to some parts of the Indian Archipelago, a very few species, perhaps of modern introduction, extending to China and Japan.

4thly. The South-African flora, perhaps the richest known in proportion to its extent, and remarkably varied within its narrow limits; several of the characteristic genera, with hundreds of species, in the south-west, have nearly or entirely disappeared at Port Natal on the east, and before we reach the tropical line to the north-west. Its connexion with other floras is also but very slight; the remote one with Australia, exemplified only in natural orders and other races of a very high type, has already been alluded to, as well as the few scattered species representing it in Extratropical South America. The only near connexion perceptible, I mean near in point of consanguinity, but far distant geographically, may be traced in its reappearance, in limited numbers, in that remarkable flora characterizing the extreme west of N. Africa and Europe from the Canaries to Ireland. The West-European species of *Erica*, *Genisteæ*, *Lobelia*, *Gladiolus*, etc. are, some of them, more nearly allied to corresponding Cape species than they are to each other; and many of the somewhat higher races, groups of species and genera, have evidently diverged from stocks now unrepresented anywhere but in South Africa. This West-European offset is almost limited to the western side of the Spanish Peninsula, the extreme west of France, our county of Cornwall, and the west coast of Ireland, scarcely any species crossing the Rhone or the Rhine, or spreading beyond the limits of Britain into Scandinavia; some few, however, owing to the greater facili-

ties of maritime dispersion, have been enabled to make the tour of the Mediterranean.

The above sketch may show how very much remains to be done by botanists before the history of living plants can be made very materially to assist geologists in elucidating the physical history of the globe; and it appears to me that not only the monographists, to whom I have already alluded, but compilers of local floras of any extent, to give real value to their work, should never neglect general distribution of the genera and species they treat of. I well recollect the interest which this feature gave at the time to the first Flora in which I observed it, Cambessèdes's Enumeration of the Plants of the Balearic Islands, published in 1827; and every one must feel how much the value of all of J. D. Hooker's Floras and enumerations are enhanced by his constant attention to geographical distribution.

The above considerations relate only to phænogamous plants and terrestrial and freshwater cryptogams of the highest order. The distribution of the lower cryptogams, as well as of the marine plants generally, is more complicated, and, perhaps, less instructive, owing to the extraordinary facilities many of them possess for a rapid dispersion over immense areas. Very little, however, has, to my knowledge, been yet written on the subject.

On the geographical distribution of Insects we have no general treatise. The subject is, perhaps, too vast to be taken up as a whole in the present state of the science. Entomologists are as yet absorbed in the discrimination of forms, so much more varied even than those of plants (for which purpose they have to divide themselves into Lepidopterologists, Dipterologists, Coleopterologists, and other classes), or in the difficult yet highly instructive research into their anatomical structure, specially dignified by the Germans by the name of Scientific Entomology. But their geographical distribution, as depending on their life-history, on the history of the race as well as on that of the individual, is no less interesting, and requires to be treated of, generally as to the whole class, and separately as to races of different degrees, which, if distributed according to their migrations and local settlements, will form groups which, as in the case of plants, must in many cases confirm or check those founded on structure, although in others the combinations might be different. Generally speaking, insects, like plants, cast off their progeny in vast numbers in a dormant state, that of eggs, which may be carried to any dis-

tance and hatched and bred without further care on the part of the parents, but with this further advantage, that they can migrate in search of food, and can select the place where they deposit their eggs. We might, therefore, be led to suppose that the area of species was more constantly changing than in the case of plants. But their facilities for migration are counterbalanced by their great dependence upon external conditions, which are local. Amongst the essays placed in my hands by Mr. Dallas (to whom I am again indebted for references to Zoological works connected with my subject) is one by Dr. L. Möller, of Mulhausen, entitled 'Die Abhängigkeit der Insecten von ihrer Umgebung' (1867), in which, from long and close observation of Insect life in his limited neighbourhood, he has given an interesting sketch of their dependence (1) on climate, (2) on soil, (3) on plants, (4) on animals, and (5) on man and his works—that on plants, as their chief food, being perhaps the most important. And although, as in other animals, it is the supply of food which chiefly regulates their habitations, and the search for food that determines their migrations, yet there are comparatively few who, like locusts during the eating-stage of their life, after having exhausted the food within reach, travel onwards in search of a fresh supply. Generally speaking, it is not the food of the animal in its perfect propagating highly locomotive state, but that of the more stationary larva, often living in a very different medium, which determines the spot where the parent lays its eggs, and probably induces it to prefer the place whence it had itself proceeded, to the search for new and unknown localities. The Tsetse fly of Africa, the mosquitos of the great American rivers dare not follow the animals they prey upon beyond the reach of the localities favourable for the rearing of their larvæ, until at least their work of propagation has been accomplished.

Insect races would thus appear to be, almost as much as plant races, fixed to particular localities, independently of extraneous agencies, which, almost as much as with plants, effect their dispersion. Their antiquity is also supposed by some to be as great as that of plants; and we must therefore expect considerable similarity in the two classes, in their gradual dispersion, in the assistance given to the fixation of new forms by geographical isolation, and in the general areas of distribution. There seem, however, to be a few rather marked differences. The following are the principal works I have consulted on the subject.

Moritz Wagner's Essay on the law of migration of Organisms ('Die Darwinsche Theorie und das Migrationsgesetz der Organismen') is given as the result of studies of organic life made in various parts of the world, but more especially in Algeria and Central America. There seems however to be too much of absosolute general propositions in proportion to the facts adduced in their support; and we miss entirely that discussion of opposing observations which characterizes all the works of Darwin. His chief propositions are, that the law of migration is a necessity for all races of organisms, and that migration, and consequent isolation, is not only a great element in the formation of new races, but is an absolute condition, without which natural selection is powerless. The idea seems to have been based on the speculative application of Darwin's theories to Wagner's own observation that in Algeria the areas of insect races are strictly limited by broad rivers, and that beyond such impassable barriers these races are represented by nearly allied but distinct races. Coupling these with the remarkable isolation of plant and insect races he had observed on the detached peaks of Central America and Columbia, and with a few confirmatory data collected from the works or correspondence of other naturalists, he draws the general conclusion that races, whether of insects or plants, separated by impassable barriers are always distinct, and that the greater the distance that separates them the greater is the difference between them. But the facts he gives are surely neither sufficiently specific nor numerous to warrant so sweeping a conclusion; and certainly, as to plants, I cannot say that it is confirmed. He gives also a general rule that new-born varieties, without a long-continued separation from their cospecies, will not succeed in establishing a new race, natural selection will not take place, the unimpeded sexual mixture will always maintain general uniformity in all the individuals of a species. That this may generally be the case has been well shown by Darwin, Hooker, and others; but that it is absolutely so it is difficult to admit. Bates, in the case of the Lepidoptera of the Amazons, observes that while in some races varieties seem to mix indiscriminately, yet in *Ithomia*, for instance, the butterflies are observed always to pair with their exact counterparts. L. Möller, again, remarks that each insect only visits flowers of certain species, and that quality which determines their selection may quite as well be something which, in our estimation, characterizes a variety only, as that which indicates a fixed

species. And if this cross fertilization between the individuals of one variety be but slightly more frequent, more prolific, or productive of progeny, more suited to circumstances, than that between those of two different varieties, that one variety will gradually (according to the law of natural selection) become more and more fixed, notwithstanding occasional crossings with others, which must, under the premises, become gradually more and more rare. It does certainly appear that such slight varieties as the red and blue *Anagallis*, the pink and blue varieties of *Veronica*, several of our roses and brambles, are gradually losing the power of interbreeding and rising into species, notwithstanding their living together, and having to all appearance done so since they were first produced*.

Gabriel Koch's 'Indo-australische Lepidopteren-Fauna in ihrem Zusammenhang mit der europäischen, nebst den drei Hauptfaunen des Erde' (1865), to which I alluded in my last year's address, is chiefly founded upon the observation of numerous Old-World species of Butterflies, which he finds to have a very wide geographical range, a large number having been published from far distant countries as distinct which have proved to be quite identical, or varieties only, occasioned by a difference of food and climate. He shows how interchange of species between adjoining lands, as well as more distant migrations, prevents the fixing any very definite fauna-regions, but enumerates a number of genera characterizing two great faunas—the northern or European, corresponding nearly to the northern flora above mentioned, and the Indo-Australian, which is nearly the same as the Asiatic tropical type in plants, and which he illustrates by the discussion of a considerable number of species extending from Silhet and China over the Archipelago to Queensland and New South Wales; and of this also similar examples may be given from plants. To this he adds, in order to complete the repartition of the globe, a third (American, and especially South-American)

* A total change in the colour of the flower, although unaccompanied by any other evidently altered characters, appears to be attended with some constitutional peculiarity which interferes with cross breeding. Nevertheless, in Southern Europe, where the red and blue *Anagallis* grow together in great abundance, I have twice found individuals with pale lilac-purple flowers, which may have been hybrids between the two. Darwin has, in his 'Origin of Species,' called attention to the failure of all attempts to cross artificially these two races differing in nothing but the colour of the corolla.

region, which, he observes, may be emphatically termed the Lepidopterous land *par excellence*, from the enormous number and variety it exhibits. I do not find, however, any indication of any types corresponding to the two remarkable southern ones I have mentioned in respect of plants, the Australian and the South-east African. He considers the Australian Lepidopterous fauna "a daughter of the Indian," with a few genera of its own; and as to Africa, he appropriately connects the north with Europe, the east with Asia, saying nothing of the south-west. He also entirely ignores Darwinian views, never making the slightest allusion to them, believing that the presence of a species in distant regions is due sometimes to migration, sometimes to a simultaneous *origin* (Entstehung, without alluding to creation, Schöpfung); and he insists that so-called representative or closely allied species in distant regions are generally varieties only, produced by food and climate, not true species, giving instances to prove that change of food in the caterpillar alters the colour of the butterfly, that dry cold weather diminishes the size, &c.

Mr. Wollaston's 'Coleoptera Atlantidum' (1865) is most valuable for the care with which the geographical distribution is given of every one of the 1449 Coleoptera which had been detected and, in a great proportion, collected by himself in the Atlantic islands, affording a mass of reliable data of peculiar interest with reference to the history of organic life in detached islands. In the general conclusions given in the introduction, Mr. Wollaston, after showing the undoubted connexion of their insect fauna with that of the Mediterranean region, appears very unwilling to give up the idea that these islands are the fragmentary remains of an ancient continent broken up by violent volcanic action, an hypothesis which he considers the most satisfactory explanation of the peculiarities of their insect fauna, but which has been so ably refuted on those very grounds, as well as on other considerations, by Lyell, especially in the forty-first chapter of the 10th edition of the 'Principles' above quoted, published since the appearance of Wollaston's work. As to origin, Mr. Wollaston cannot believe in any gradual modification of specific types now going on. He admits, indeed, that "insular phases have in many cases been matured from primæval types," but believes that races thus initiated have acquired their peculiarities in a very few generations, after which they would remain fixed, so long as the races themselves lasted. It must be remembered, however, that

under the law of variation by natural selection, any amount of permanency may be consistent with any amount of change, any race may exhibit neither permanency in all its branches, nor total change even through two or three geological periods; variation may be constant, whilst the fixation of divergent forms may be exceedingly rare.

The interest attached to Mr. Wollaston's study of the Coleoptera of these islands is again much enhanced by a similar investigation of the Cape Verd group, the results of which he has recently published in his 'Coleoptera Hesperidum,' after the same instructive plan he followed in the 'Coleoptera Atlantidum.' The remarkable correspondence of the Coleopterous fauna of the Cape Verd Islands with those of the Canarian and Madeira groups, the extreme paucity of Tropical-African additions, or of any tropical feature (notwithstanding the latitude), the agreement of the different groups of islands in question in other physical peculiarities and phenomena, all combine, in his mind, to proclaim them "to be but outposts of a single gigantic province which has been rent asunder, and is now principally submerged." He is careful, however, not to insist upon his convictions with any dogmatism, and he "purposely ignores all reference to the geological difficulties." But neither these nor indeed any contradictory data, from whatever branch of the science they may be derived, must be neglected by the general naturalist; and if they be found insurmountable, some other solution of the problem must be sought for. Can it be in any way connected with that other problem I have alluded to, an apparent ancient connexion between the floras of South-western Africa and of North-western Africa and west Europe, notwithstanding the present impassable tropical barrier interposed?

Mr. Bates, in his various papers on the insect fauna of the Amazon valley (Transactions of the Entomological Society, New Ser. v., and Transactions of the Linnean Society, xxiv. &c.) independently of his investigations of representative species and geographical varieties, has drawn some interesting conclusions as to the relation of the Amazon region to Guiana, Columbia, and other parts of Tropical America, which appear to correspond in a great degree with what we observe in plants. Very much, however, remains still to be learnt of the rich and varied endemic vegetation of the high campos south of the Amazon, of the eastern declivities of the Andes, and of the broken ground surrounding

the Roraima and other districts to the north, from which much of the wide-spread Amazonian vegetation appears to have descended.

Mr. Andrew Murray, in a paper on the Geographical Distribution of the Coleoptera of Old Calabar, in the twenty-third volume of our Transactions, as well as in his Monograph of Nitidularieæ, in the twenty-fourth volume, calls attention to a remarkable representation of Tropical-American types in Tropical Africa. I have myself on several occasions indicated a similar curious connexion in various vegetable types; and if we were to rely on these grounds alone, we might, with Mr. Murray, speculate on a former continuity between the two continents across the Atlantic. But independently of geological arguments, such conclusions are much invalidated by facts since brought to notice, as, for instance, that some of these common types are also represented in Australia or other distant lands south of the Equator. The general features also of the vegetation of the two continents tend to the conclusion, more or less confirmed, I believe, in various zoological departments, that, from a very early period in the history of organic life, the broad Atlantic, from the southern tropic to far into the north temperate region, has been an impassable gulf for terrestrial organisms, except by such occasional waifs and strays as may result from actual means of dispersion.

The inquiry into the geographical distribution of Mollusca forms a branch of the science of peculiar interest, owing to a large portion of the shells and other exuviæ of the testaceous races being preserved to us through successive geological periods, and supplying, more than any other organic beings, evidences of the great physical changes that have taken place. But I am too little acquainted with palæontology to enter into the question without reading up more than I am able to do at present. Moreover Mollusca are in a great proportion marine animals; and want of time and space compels me to defer any review of what has been published with reference to the diffusion of fishes and other marine animals, or indeed of any aquatic animals and plants when regulated by different causes from those which affect the distribution of terrestrial organisms. I cannot, however, wholly pass over Dr. Günther's Memoir on Messrs. Dow, Godman, and Salvin's Central-American Fishes (Trans. Zool. Soc. vol. vi.), to which he has prefixed some very important considerations deduced from the investigation of these rich collections. In my last year's

address I referred to Moritz Wagner's Memoir on the distribution of the freshwater fishes of the same country, observing that he had ascertained one case of a marine fish identical on both sides of the isthmus. Günther has now ascertained that at least 30 per cent (59 out of 193) of the marine fish now known to frequent these shores are found on both sides of Central America. From this, and other circumstances connected with the distribution of corals &c., he suggests that North and South America may formerly have been connected only by a chain of islands similar to that of the Antilles, and that subsequently an elevation (as in other parts of the globe) took place, resulting in the final continuity of dry land, his map showing the places where the supposed channels of communication may have existed. What has been above said of the connexion between the cold or cool vegetation of the north and south along the chain of the Andes supposes, on the contrary, a much greater continuity than now exists of high land. But the two hypotheses are not necessarily contradictory to each other, or to what has been observed in other parts of the globe. The continuous range for plants is required to be much more ancient than the channels for the fish, and, indeed, as far as vegetation is concerned, must be presumed to have been once carried on to Cuba and the Antilles; and, as far as I can learn, there appears to be nothing to militate in so eminently volcanic a region against the possibility of the disruption of a mountain-chain followed at a long interval by a gradual upheaval, which, in the course of ages, shall have finally obliterated the channels which had been formed.

Coming now to the higher classes of Vertebrata (Birds and terrestrial Mammals) I would observe that whilst in plants change of area is entirely passive, transportation of species acting chiefly on the progeny when yet in a dormant state, and whilst in insects this passive transportation is more limited, but the parent can migrate in search of, or at any rate may migrate previously to the selection of, the spot where the next generation is to be reared, in the higher Vertebrata passive transportation of the nascent offspring almost entirely ceases, and migration of races depends almost wholly on the will or so-called instinct of the adult parent in the great act of depositing, rearing, and tending its young. Thus, notwithstanding a few exceptions, as voluntary migration takes place more rarely and to smaller distances, and meets with more insuperable barriers than passive transportation, the areas

occupied by races of birds and mammals appear to be generally more restricted and more marked than those of plants and insects, and have in some instances been found more instructive in illustrating the history of islands and broken lands during the more recent geological periods. And yet the general areas of distribution of the higher animals, of insects, and of plants show, as I have already observed, some remarkable coincidences.

The principle regions and areas of distribution of the avifauna of the world proposed by modern ornithologists have been chiefly based on that given by Dr. Sclater in his well-known short but very instructive sketch of the Geographical Distribution of Birds in the second zoology volume of our Journal. Founded, as it is, upon his most extensive acquaintance with, and special study of, that branch of zoology, it is to be sincerely hoped he will himself extend and develope it under the enlarged views which, in common with most naturalists, I believe he now entertains. His paper was laid before you two years before Darwin's "On Natural Selection;" he was still under the impression, then almost universal, that, "as a general rule, every species of animal must have been created within and over the geographical area which it now occupies," and consequently did not at all enter into the question of origin as having affected areas of dispersion. He distributes the avifauna of the world's surface into six regions, four in the Old and two in the New World. The Palæarctic and Nearctic together (names which give rather too cold an aspect to the regions really intended) correspond very nearly to the great northern type above distinguished in regard to plants; and he alludes to a correspondence between the two, as in the analogy between the *Sylvicolæ* and *Zonotrichiæ* of the New World and the *Sylviinæ* and *Emberizæ* of the Old; but if this correspondence is less marked than in the case of plants, it may be due perhaps to the more specially tropical character of birds generally than of plants; for we cannot well say of the latter "that most genera belonging to the northern parts of the New World, as well as in the Old World, are better represented in its tropical than in its temperate portion." The northern as well as the southern temperate regions of vegetation have a large number of genera and some natural orders almost or wholly unrepresented in the tropics, which does not appear to be the case in the Birds.

Among Sclater's four tropical Regions, the distinctness of the Neotropical, and its extraordinary richness in diversity of forms,

appears to be more or less carried out both in plants and insects; but the three Palæotropical regions of Birds, the Western or Ethiopian, the Middle or Indian, and the Eastern or Australian, although given as necessarily vague in their limits, are evidently more definite than in the case of plants. As to the Western region, for instance, we have indeed a very peculiar Mascarene flora, which extends more or less into Tropical Africa, and is scarcely represented in Tropical Asia; but yet there are too many types common to Tropical Africa, the Mascarene Islands, and the Eastern Archipelago, to give either of them any very distinct characters. And although in Tropical Africa there are a large number of very marked endemic types, they are generally isolated, or of very few species, very varied and having more connexion with detached Asiatic, Australian, or even American forms than with each other, giving more the idea of surviving fragments of a once flourishing and far extended vegetation of remote antiquity, than of members of dominant communities in the height of their prosperity. The Australian avifauna, again, as given by Sclater, is much more tropical than its flora, including as it does Papua and the Pacific Islands; for although a few Australian genera of plants may be represented in the latter districts, it is only by a very few outlying species, and the great seat of the very peculiar Australian flora is extratropical. I find also no indication of any special South-west African avifauna corresponding to its flora. Birds in the southern, as in the northern hemisphere, appear to have a much more tropical character than plants.

MM. Finsch and Hartlaub's 'Ornithology of the Viti, Samoa, and Tonga Archipelagos' (Beitrag zur Fauna Central-polynesiens, 1867) is a valuable contribution to zoogeography, from the special attention paid to the distribution of each of the 172 species hitherto discovered on those islands; and the results, including their repartition over the different islands, are given in a tabular form. In the preliminary remarks, the authors, without entering into the question of the origin of this avifauna, give a very interesting sketch of its leading features. They appear to have been much struck with the paucity of land birds in proportion to the extent, luxuriance, and abundance of bird-food in the larger islands. They especially contrast their poverty in Fringillidæ with the extraordinary rich and exclusive series of that group in the Galapagos. In general, this avifauna seems highly illustrative of that of islands far removed from continental influences. Finsch

has also given, in 'Petermann's Mittheilungen' for 1867, a sketch of the distribution of Parrots, showing, as has also been pointed out by Wallace and by Huxley, a remarkable development in Australia and South America, and a comparative paucity in India and Africa.

Mr. S. F. Baird, in the forty-first volume (1866) of 'Silliman's Journal,' prefaces a very interesting review of the geographical distributions and migrations of North-American Birds, by a sketch of Sclater's regions, which, as far as America is concerned, he proposes to modify by the establishment of the West-Indian islands as a region as distinct from South as from North America, on account of the large number of their endemic races—genera as well as species. The peculiarities of insular faunas, as well as of their floras, appear, in this as in so many other instances, to stand in the way of their association with large continental areas of distribution.

In regard to Mammals, we have in Mr. Murray's 'Geographical distribution of Mammals' (1866) a more complete treatise than we have of any other class of animals. The comparatively limited number of races has also enabled him to enter more into detail of the distribution of the smaller groups, in some cases down to individual species, illustrating the whole by a series of 101 maps, showing at a glance the areas known, or supposed, to be occupied by the principal races treated of. In my last year's address I referred to the general inquiries with which this work is prefaced; looking now more into the details, with a view to a comparison with the distribution of plants, and passing over the various speculations on geological changes, many of them no doubt very plausible, but which I do not feel myself competent to discuss, I observe that he very nearly follows Dr. Sclater's views as to the general repartition of the fauna over the world's surface; for Murray's provinces correspond generally with Sclater's regions, though under different names, with a slight modification of the vague limits separating the northern and the tropical areas both in the New and the Old World, and a somewhat different general arrangement and estimation of the comparative importance of the primary divisions. As a general result, the distribution of Mammals may, in many respects, be nearer to that of plants than that of the avifauna; the connexion of the New and Old northern provinces, and the separation of the New and Old tropical ones, is more marked; and Mammals are evidently of a less

decided tropical character than Birds. But the most striking feature in Mammals is the isolation of Australia. Rats and Bats appear, indeed, to be the only important groups Australia has in common with other regions. The Australian Marsupials have as limited a range as the true Australian flora, whilst there appears to be none of that extension of tropical Asiatic types into North-east Australia which is so prominent in plants and insects, the consequence probably of the absence of that passive transportation above alluded to. I find in Murray's work no indication of any special South-west African type corresponding to that which is so strongly marked in plants. In a continuous continent, voluntary migration appears to have many advantages over passive transportation in destroying the boundaries of local regions of organisms.

I have necessarily been anxious to ascertain the zoogeographical views of Prof. Huxley, not only from the great weight to be attached to his authority on all questions of ancient as well as of recent zoology, and from a knowledge that he had devoted much study to this particular branch, but also on account of his well-known hearty concurrence with Darwinian theories. I cannot learn, however, that he has yet published more than the general sketch in his paper on Gallinaceous Birds in the 'Proceedings of the Zoological Society' for last May. In the general distribution of the great zoological regions, he considers their primary division into northern and southern of greater importance than that into Neogæan and Palæogæan. He therefore comprehends Sclater's Nearctic and Palæarctic Regions, with the Æthiopian and Indian portions of the Palæotropical, under the general name of Arctogæa, and whilst admitting the strong distinctive character of Sclater's Neotropical region, which he thinks might be better designated as Austro-Columbia, he detaches Australia from the Palæotropical as a distinct region, adding New Zealand as an equally distinct though small one; but he suggests that the two latter, with Austro-Columbia, might form, under the name of Notogæa, one second great geographical division of the world's fauna.

The last work I shall notice is Wallace's 'Malay Archipelago,' in which he has so admirably illustrated the relations of the faunas of the respective islands with each other and with those of the nearest continents, and their bearing on the physical history and relative ages of the principal islands. His chapters on the physical geography of the archipelago, and on the natural history of the five groups into which he divides it, detached from

the lighter but not less instructive narrative, exhibit his views in so lucid and concise a manner that I need not attempt any analysis of them. I would only observe that his conclusions as to the comparative antiquity of Java over Sumatra as a separate island, of the still more ancient isolation of Celebes, and of the long interposition of a deep gulf separating the western from the eastern islands, probably could not have been deduced from any study of their vegetation. There is nothing to show that the barrier, so impassable for the higher animals even when narrowed as it is between Bali and Lombok, is not frequently even now, or at any rate has not been in former times, traversed by plants. We have, it is true, as already mentioned, no reliable flora of these regions from which the comparative vegetation can be deduced with any accuracy; but we know that the outlying Australian types extend as much into Borneo as into Celebes, and that the Indo-Malayan character, as to species as well as genera, is very very well represented in Timor and North Australia—another illustration of the great difference in the results of passive and active dispersion.

In venturing upon some of the above criticisms, I trust that zoologists will not consider that I have travelled too much out of my own department. In searching out the geographical distribution of any group of plants, or the range of any flora I may have been occupied with, I have frequently found great deficiencies and inaccuracies in this respect in some of our best floras and monographs; and when I have wished to compare the results with the distribution of the animals depending on or accompanying the plants, it has appeared to me that local faunas and monographs from which the necessary data could be readily extracted, were still more rare. In calling your attention to these deficiencies I am far from wishing to depreciate those more important researches into anatomy, structure, and physiology which, more even than in Botany, have raised Zoology so high above the mere museum-cataloguing of the earlier part of this century; but I have been very desirous to impress upon zoologists, as well as botanists, the value now to be attached to the collection and arrangement of accurate data in this other branch of the science, which must contribute as much or more than any other to the solution of that which has been termed the great problem of the day, the investigation of the origin, development, and life-history of species or races.

OBITUARY NOTICES.

The Secretary then read the following notices of deceased Members.

G. A. Walker Arnott, LL.D., F.R.S. Ed., Regius Professor of Botany in the University of Glasgow, died on the 17th of June 1868, at Edinburgh, in which city he was born on the 6th of February 1799.

Having completed his education in the High School, and afterwards in the University, where he obtained a distinguished place both in languages and mathematics, he took his degree of A.M. in the year 1818, and after a further period of professional study for the law, was admitted a Member of the Faculty of Advocates in 1821. The practice of his profession, however, appears to have held out but little attraction to him, and his attention (chiefly, as it would seem in his case, as in that of so many others, owing to the influence of the teaching of Professor Jameson) was soon devoted almost exclusively to the study of Natural Science, and, at first, especially to that of Mineralogy. But the attractions of Botany subsequently prevailed, and that branch of science soon became the principal object of his life. This predilection was confirmed by his visit to France in 1822 and 1825, and the intercourse he thus established with the great French botanists whose lectures and herbaria he frequented, and in whose botanical excursions he shared.

One of the first fruits of his botanical studies was also published in the 'Mémoires de la Société d'Histoire Naturelle de Paris,' in French, under the title of "Sur quelques Mousses de Rio Janeiro." In November 1825 he was elected a Fellow of this Society, and in the same year visited the South of France and the Pyrenees, in company with our President: an account of this visit, from his pen, appeared in the 'Edinburgh New Philosophical Journal' in 1826. He resided for some time at Montpellier, and afterwards proceeded to Geneva, where he had the opportunity of consulting the herbarium, and doubtless the advantage of the conversation of De Candolle. In 1828 he visited Russia, and during his residence acquired a considerable knowledge of the language.

In 1831 he married, and took up his abode at Arlary, in the county of Kinross, till 1845, when he was appointed Professor of Botany at Glasgow, where he afterwards continued principally to reside. But during the interval he was by no

means idle, publishing numerous papers in various periodicals, British and foreign, on botanical subjects, besides several important works, in which he was associated, for the most part, with other botanists, and especially with Dr. Wight and the late Sir W. J. Hooker. "In fact," as is observed by his friend Dr. Cleghorn, to whose account, in the 'Gardeners' Chronicle,' of the career of Dr. Arnott, I am chiefly indebted for the substance of this notice, "it is a remarkable feature in the scientific work of Dr. Arnott that so much of it was done in conjunction with others; his single-hearted devotion to science was conspicuous in his cordial cooperation with men of different nations and different temperaments, such as Sir W. Hooker, Drs. Greville and Wight, Röper, and Nees von Esenbeck."

Latterly, or since 1858, Dr. Arnott's published papers, with the exception of one on *Hypericum Anglicum*, appear to have reference to the *Diatomaceæ*, a subject on which he was deservedly regarded as a great authority. These communications appeared, from 1858 to 1860, in the 'Quarterly Journal of Microscopical Science;' but they probably embrace but a very small part of what he really did in that ob cure branch of botany, for, as Dr. Cleghorn remarks, the greater portion of his observations were communicated in his correspondence with scientific friends in all parts of the world.

But although, as it has been shown, Dr. Arnott's published papers and works have been numerous and important, his place as a botanist, and more especially as a botanical teacher, is not to be measured by them alone; "account must be taken of the spirit in which he worked, of the extent of the researches he carried out, of the immense correspondence he kept up, and of the aid and encouragement which he was ever ready to give to young and rising botanists." No man was ever more ready to devote his time to any one desirous of information, and, consequently, as a Professor, he was much respected and esteemed by all real students. As a botanist, those who are best able to judge are aware that his careful habits of observation and minute accuracy of description render his works peculiarly valuable; and his reputation in this respect is quite as great on the Continent as in this country.

Charles James Beverley, F.R.S., who was elected a Fellow in the year 1835, died at Yarmouth on the 16th of September 1868, in his 81st year.

Mr. Beverley entered the Navy in 1810, as Assistant-Surgeon, in which capacity he served during four years in the Baltic and Mediterranean stations, but chiefly in the latter, and was often very actively engaged in warlike operations, amongst which may be mentioned the capture of Porto d'Anzo in 1813.

But falling into bad health, he was sent to England in charge of the sick and wounded from Lord Exmouth's fleet.

On his recovery he was appointed to the 'Tiber,' in which ship he served till 1818, when, upon strong recommendation, he was selected by the Admiralty as Assistant-Surgeon in the 'Isabella,' then about to proceed to the Polar Regions under the command of Sir John Ross.

In 1819 and 1820 he accompanied Sir Edward Parry's first expedition, and passed the winter at Melville Island, which was then first discovered. On his return, he was promoted to the rank of full Surgeon; but when nominated as Supernumerary Surgeon to the flagship on the Barbadoes station, fearing the risk of so sudden a change from an arctic to a tropical climate, he was forced to decline the appointment, and was consequently removed from the list of Surgeons.

Notwithstanding this, however, in 1827 he volunteered his services as Surgeon and Naturalist in the long and perilous ice-journey undertaken by Sir Edward Parry in the seas of Spitzbergen.

On quitting the public service, Mr. Beverley entered into private practice in London, and on his retirement resided for the latter years of his life at Bath.

Though so active and zealous a naturalist, Mr. Beverley does not appear to have published any results of his observations.

Henry Boys, M.D., M.R.C.S., was born at Sandwich, in Kent, on the 8th of November, 1775. He was educated for the medical profession, and in 1795–6 attended Guy's and St. Thomas's Hospitals, acting as a dresser to Mr. William Cooper, Surgeon, of Guy's, and in 1796 passed Surgeons' and Apothecaries' Halls. He was then made Dispenser to the Royal Naval Hospital at Deal, and remained in that situation till the close of the war at the peace of Amiens. In 1804 he was appointed Surgeon to the Forfar Militia, and spent about a year and a half in Scotland with that regiment; and during that time obtained the diploma of M.D. from the University of Aberdeen. He then passed the Medical Board, and entered the regular medical service of the army.

In 1806 he obtained leave to transfer his services to the foreign branch of the Paymaster General's department, for the purpose of accompanying his brother, who had been appointed to the charge of the pay department, on an expedition to South America, under General Robert Crawford. On this occasion he had the opportunity of spending a few weeks at St. Iago, one of the Cape Verd Islands, and a like time at the Cape of Good Hope, and of visiting St. Helena, Monte Video, and Buenos Ayres; but at the latter place the British forces met with a defeat, and the Paymaster-General's department had to return to England. In 1809 he again accompanied his brother, who had been appointed to the charge of the pay department to the forces under the Duke of Wellington in the Peninsula, and served as his brother's assistant in Spain and Portugal till the return of the army in 1814. He also visited Portugal again, in the same capacity of Assistant Deputy Paymaster-General in 1826, on an expedition under General Sir William Clinton.

In the intervals of his services he generally settled as a surgeon in London or its neighbourhood; but having married in Lisbon a Portuguese lady, and having a large family about him, he found it advisable to emigrate to Canada, and in 1833 settled himself in his profession at Whitby, in Upper Canada. In 1839 he was appointed Bursar to the University of Toronto, which appointment he held for about ten years, and then retired upon a compensation of about two years' salary. From that time he continued to reside at Barrie, a small county town on Lake Simcoe, about sixty miles to the north of Toronto, most of his children having married and settled, either at Barrie or within a few hours' excursion by rail.

He evinced throughout life a great fondness for botany and other branches of natural history, and his service abroad gave him many favourable opportunities for indulging such pursuits; but the calls of active service and business, and the demands made upon his time by a very numerous family, seem to have prevented him from publishing any of the results of his observations, with the exception of a short paper entitled "Account of the *Flustra arenosa* and some other marine productions," which, illustrated by a drawing from his own pencil, he communicated to this Society in 1799, and which was published in the 5th volume of our 'Transactions.'

He died at his house near Barrie, on the 23rd of April, 1868,

at the advanced age of 92, having (except that he suffered from deafness) retained his faculties to the last. In a letter, dated "Toronto, May 18th, 1868," announcing his death, the Rev. Mr. Hincks adds :—"Whilst engaged at the University, he diligently collected the land and freshwater shells of this country, and gave much attention to some branches of entomology, having carefully drawn the larvæ of many of our Lepidopterous insects, and contributed much towards the infant museum of the University, when there was no Professor of natural science, and no attempt had as yet been made to form a collection adapted for usefulness in teaching, such as now adorns the splendid building erected within the last two years. He deserved to be remembered among the pioneers of natural science in this country, his love of which he early manifested by seeking admission to the Linnean Society, of which he lived to be the oldest member, excepting the venerable Dean of Winchester."

Thomas Brightwell, Esq.—Mr. Brightwell, of Norwich, was born in 1787, and died in 1868. From a very early period of his life he took much interest in the study of natural history, his attention being first directed to entomology. He formed a very considerable collection of insects, especially of the Coleoptera, which was subsequently much enlarged by a correspondence with German naturalists, through Mr. Hunnemann, of London, and Dr. Leach. His studies were afterwards extended to all classes of insects, both British and foreign, and he was fortunate enough to procure a considerable collection of insects from the Indian Archipelago, chiefly Sumatra. For this he was indebted to Capt. Bunyan, of the East-India Company's Service, who purchased it from a man who had been in the service of Sir Stamford Raffles. It included many fine and rare Lepidoptera and Coleoptera, with a good sprinkling of the other Orders, and was in beautiful preservation. On the arrival of these treasures, they were inspected by Sir James Smith, who then lived next door to Mr. Brightwell, and who had in his house the Linnean Collection. He was greatly pleased with many of them; indeed, Mr. Brightwell's collection, with this addition, now far surpassed the Linnean one in that department, both in the number and variety of species. It is at present in the Norwich Museum, to which it was transferred some quarter of a century ago.

Mr. Brightwell was greatly assisted in his studies by Mr. Wilkin, his brother-in-law, and for some years carried on a corre-

spondence with many fellow labourers in the same field, more especially with Mr. Kirby, whom he once visited at his house at Barham, near Ipswich. In the year 1821, Mr. Brightwell became a Fellow of this Society, being introduced by Sir J. E. Smith. He never contributed any paper to our 'Transactions,' but confined himself to communicating to the monthly Nos. of the 'Magazine' and 'Annals of Natural History,' in which periodicals are contained several papers of his writing.

In the 'Edinburgh Philosophical Journal' there also appeared a paper by him on the subject of the introduction of the salt-water into Lake Lothing, at the time of the formation of the Lowestoft Navigation Works. His attention was subsequently much directed to the subject of Leeches, and to the Medicinal Leech in particular. "I remember," says his daughter, "accompanying him on one of his excursions in search of this description of game. We hunted along the margin of the river which meanders through the valley that skirts the picturesque village of Costessey. Here we found a prize in the shape of a beautiful green Leech, to the belly of which were attached a multitude of tiny grey-coloured young, which to my inexperienced eyes appeared as so many tentacula. This was the *Nephelis tessellata*, and was afterwards described in the 'Annals of Natural History,' together with another Leech which attaches itself to freshwater fishes." Mr. Brightwell was successful in tracing the development of this latter species from the egg up to the perfect animal. In his examination as to the development of the common Medicinal Leech, he found especial interest, it being an unsettled question among naturalists whether that animal were viviparous or oviparous. He was much assisted in carrying on his investigations by the opportunities afforded in Norwich, from the fact that one of the dealers in Leeches had at that time a large tank, or reservoir, prepared with a clay bottom, and planted with the aromatic flag, in which he kept thousands of these creatures.

Mr. Brightwell succeeded in demonstrating, by a series of observations carried on carefully for two or three years, the whole process of the growth and development of the animal, which he hatched from the egg; and found means of feeding the almost microscopical young ones, which he kept for upwards of twelve months, till they assumed the normal form. On this subject he read a paper in St. Andrew's Hall at the Meeting of the Medical Society, when Mr. Crosse was in the Chair. It was

afterwards published in the 'Medical Journal' (vol. iii., 1846), and the whole subject attracted much notice, and called forth some debates, as appears in an elaborate paper by Dr. Williams, of Swansea, published in the 'Report of the British Association' for 1851, in which reference is made to this paper.

It was not till a later period that these more general studies were, to some extent, superseded by an almost entire devotion to microscopical research, the fruits of which appeared in various papers published chiefly in the 'Microscopical Journal,' to which, at one time, Mr. Brightwell was a very regular contributor. His attention was first directed to the living microscopical animals abounding in our ditches and ponds. In his walks and rides he furnished himself with phials and glasses, which were filled from many a green pool by the road-side; but the choicest and most prolific source was found very near at hand, in a pond within a short distance of his own house. It was situated in an old brick-yard, probably of a very ancient standing. Be that as it may, it afforded a very rich and rare variety of species. Among the rest, he was fortunate enough to discover a new rotiferous animal, which, from certain peculiarities of structure, attracted much attention. It was named after him. To those curious on these points, it may be interesting to say that, whereas among the Infusoria in general no distinction of sex had ever been observed, this animal formed a singular exception to the rule, the male differing entirely from the other sex in form and structure, being about half the size of the female, exceedingly transparent, and without any jaws, gullet, stomach, or hepatic organs. This curious anomaly excited no small interest, and Mr. John Dalrymple wrote a very elaborate memoir on the anatomy of the *Asplachna Brightwellii* (as it was afterwards called), which was published in the Transactions of the Royal Society.

Another species afforded him much interest in tracing its development. *Zoothamnium arbuscula* is one of the largest and most interesting of the tree- or coralline-shaped animalcules; it is found on the stalks of the White Water-lily and other aquatic plants, is visible to the naked eye, and when expanded has the appearance of a minute coralline *.

Not being himself a draughtsman, he employed his daughter

* Mr. Brightwell's observations showed that the reproduction of this species was effected by a kind of "alternation of generation," or something very analogous to it.

to figure the various animals which fell under his observation. She says:—"I well remember the eager interest with which he watched the process he has so well described in this curious and unique case. The first drawing was made before breakfast, and immediately after the meal my pencil was again in requisition. I began to figure a long-stalked bull-headed animal, which, whilst I was sketching it, Proteus-like, altered its form, becoming pear-shaped, and then splitting in a queer and most provoking manner. Fast as I drew I could not keep pace with its movements. I was almost ready to despair. My father in the meantime was all eagerness to watch the progress, and could scarcely keep his eyes from the glass long enough to afford me the necessary time for observing and figuring its various phases. As best I could, I rendered upon my paper the successive transformations this curious animal underwent. Never before or since have I beheld the process of growth visibly carried on before my eyes. Marvellous and mysterious energy! In the contemplation of the rapid and truly wonderful development of animal life, as seen in these minute organisms, we seem to approach some of the great arcana of nature."

In the year 1848 Mr. Brightwell printed a little work, entitled 'Sketch of a Fauna Infusoria for East Norfolk,' which comprised the results of his microscopical studies during many years. "The subjects have been sought in my own immediate neighbourhood," he says, "and the facts carefully recorded from personal observation." Figures are given of every species noticed in the work, drawn and lithographed by his daughter. Only 100 copies were printed, which were presented by him to various naturalists at home and abroad, from most of whom he received letters of acknowledgment, and many friendly hints, encouraging him to persevere in his investigations.

From this time he carried on a much more extensive correspondence, receiving and exchanging specimens of *Diatomaceæ*, and other microscopical objects, now so easily transmitted by post, and his collections were thus considerably enlarged, and amounted eventually to upwards of 3000 mounted objects. Latterly, he was much occupied in examining animals of this order, and they formed the subject of various papers which appeared in the 'Microscopical Journal,' illustrated by beautifully executed figures drawn by Mr. Tuffen West. His papers on the *Chætoceri* and *Rhizosolenia* of Ehrenberg demonstrated the true

character of the perfect forms of various species of which that author had only described fragments. His paper on the former genus was regarded as the most useful, as it was the most elaborate of his contributions, and his two papers on the *Triceratia* embraced descriptions of all the then known species of that beautiful genus.

After a time, the interest of these studies was shared by some few persons of similar tastes in Norwich, and their mutual communications led to the formation of a Microscopical Society, to which Mr. Brightwell presented all his microscopical apparatus, including one of Ross's excellent instruments, his cabinets of objects, and all his papers and correspondence. These are now placed in the Norwich Museum, and are used by the members of the Microscopical Society at their meetings.

The mention of the Museum reminds us that in the establishment of that Institution Mr. Brightwell took an active part, and ever afterwards devoted much time and attention to it, being latterly one of its Vice-Presidents, and a regular attendant on all its Committees, from the commencement of its history. It was a constant object of interest to him, and he regarded with the utmost satisfaction its gradual progress; indeed one of the last public meetings at which he was present had reference to its interests.

John Dickinson, Esq., F.R.S., F.A.S., F.G.S., &c., and a magistrate for the county of Herts, died on the 11th January last, in his 87th year, having been born on the 29th March, 1782, the eldest son of Capt. Thomas Dickinson, R.N., who was for many years superintendent of shipping to the Board of Ordnance.

Mr. Dickinson was well known as amongst the most eminent of English paper-makers, and as one to whom the enormous modern improvements in the manufacture of that article may in very large measure be assigned, inasmuch as he was one of the first to make use of Mr. Fourdrinier's patent "for manufacturing paper of an indefinite length;" upon which he also greatly improved in his own patent, of June 30th, 1807, for machinery for cutting and planing paper so made; thus, in principle at any rate, if not in every detail, completing the modern method of paper manufacture. His inventive genius in subsequent years produced numerous other important inventions; and especially should be noticed the machinery patented by him in 1809, for the manufacture of paper by means of a cylinder of brass, covered

with wire gauze, and connected with an air-pump—a contrivance by which a "perfect revolution was effected in the manufacture, the wire gauze going into the fluid pulp perfectly clean, and coming out covered with a film of paper, which could be immediately transferred to a felt, and dried, polished, and cut into sheets within a few yards."

In consequence of these continual improvements, Mr. Dickinson's genius as an inventor was so highly appreciated by scientific men, that Sir Humphrey Davy and Dr. Wollaston offered to propose and second him for the Royal Society in 1818, although he did not find it expedient to join that distinguished body till much later in life, viz. in the year 1845. In 1851 he communicated to that Society some observations on the supply of water from the chalk strata in the neighbourhood of London, containing much valuable information as to the percolation of water through chalk. In his latter years he took much interest in astronomy, and erected an observatory at his country house, near Abbot's Hill, Abbot's Langley, of which he was at once the architect and builder. His mental and bodily activity were extraordinary, and, in the words of one of his oldest friends, "he had thoroughly lived out his life, and had found time and means to crowd into the short intervals of business more kindly and generous deeds than would make the staple of many men's lives." He was elected a Fellow of this Society in the year 1853.

Sir Charles Wentworth Dilke, Bart., was born on the 18th February 1810; the son of Mr. Charles Wentworth Dilke, a well-known critic and literary man, and formerly editor and chief proprietor of the 'Athenæum' Journal.

Sir Charles was educated at Westminster, and afterwards at Trinity Hall, Cambridge. For a short time he studied the law, but early in life took part in the literary labours of his father, and devoted himself almost entirely to literature. His leisure was mainly devoted to the affairs of three or four of the learned societies. He took a very prominent part more especially in the management of the Society of Arts, and of the Royal Horticultural Society, whose resuscitation may in fact be referred in no slight degree to his exertions. He was also one of the first projectors of the Great Exhibition of 1851, and was an active Member of its Executive Committee.

In 1853 he was appointed one of the Commissioners to represent this country at the American Industrial exhibition at New York,

a special report upon which, prepared by him, was ordered to be printed by the House of Commons in the following year.

When the second Great Exhibition of 1862 was proposed, he was appointed one of the five Royal Commissioners for conducting it. He also acted as Chairman of the Committee of the International Horticultural Exhibition in London in 1866, and by his active business habits and tact contributed greatly to its success.

In 1865 Sir Charles entered Parliament as member for the Borough of Wallingford. He was Justice of the Peace for Middlesex, Fellow of the Society of Antiquaries, and of the Royal Geographical Society, and an active member of many other public and learned bodies.

He died on the 10th of May, somewhat suddenly, but having previously been for some time in failing health, at St. Petersburg, to which city he had been invited as one of the English guests at the forthcoming Exhibition of the Russian Horticultural Society.

James Edward Hepburn, Esq., F.G.S., formerly of Tovil Place, near Maidstone, died on the 16th April 1868, at Victoria, Vancouver's Island, having been admitted into the Society in the year 1849. Though well known, as I understand, among ornithologists as a large contributor for many years to the collection of United States' birds at Washington, Mr. Hepburn appears to have contributed only a single short paper to the literature of science. This is a brief notice in 'The Ibis' (vol. v. No. 17), "On the bird mentioned by Lord Milton under the name of the 'Booming Swallow,'" which Mr. Hepburn believed to be the common Night Hawk, *Chordilus virginianus*.

Mr. Hepburn appears also to have made a large private collection of North-American birds.

John Dalston Jones, M.D., F.R.C.S.E., who died on the 8th March 1869, was a medical practitioner of considerable eminence at Dalston. He was a native of Towyn, in Merionethshire, and was principally attached to the study of ornithology. He had a very fair collection of stuffed specimens of British birds, with their nests and eggs, with which every available space in his residence was ornamented. Although a Fellow of the Society since 1850, Dr. Jones does not appear to have published anything on natural-history subjects; but several communications have appeared from him in the Transactions of the Royal Medico-Chirurgical Society, and in the medical journals.

Benjamin Kennedy, Esq., died on the 3rd August, 1868, having

been a Fellow of the Society since 1836. I regret that I am unable to furnish any particulars concerning Mr. Kennedy's life, nor do I know what particular department of natural history he cultivated.

Samuel Osborn, M.D., F.R.C.S., practised medicine at Brixton, and held several important public appointments. He was formerly a surgeon in the Bombay Army, and in the year 1840 was author of the Fothergill Prize Essay on Bronchitis. I am not aware that he ever wrote upon natural-history subjects. He died on the 10th of February 1869, in his 55th year.

Edward Phillips, M.D., M.R.C.S., was physician to the Coventry and Warwickshire Hospital, and Senior Magistrate for the City of Coventry. The death of Dr. Phillips, which occurred on the 9th November, 1868, in his 52nd year, was deeply felt by all classes in Coventry and the neighbourhood, who in him lost a kind and skilful friend, distinguished by many excellent qualities in the exercise of his professional and public duties, as well as in all the private relations of life.

Henry Glassford Potter, Esq., F.G.S., died at Brighton on the 3rd June 1868, aged 58. He was elected a Fellow of the Society in 1836.

Henry P. Prescott, Esq., died on the 6th February, 1869. He was elected a Fellow in the year 1864.

Nathaniel Bagshaw Ward, F.R.S., &c., a man whose name is well known and most deeply respected, not only by the Fellows of this Society, of which he was so long a Member, but by all botanists and horticulturists throughout the world, died on the 4th June, 1868, in his 77th year, having been born in the year 1791. His father, Mr. Stephen Smith Ward, was a medical practitioner of great repute in the eastern part of London, a repute which was fully maintained by his son and successor. In the midst of the duties of his anxious and laborious profession, though performed with exemplary assiduity, Mr. Ward nevertheless found time for the cultivation of his favourite pursuits in natural history, and more especially in botany.

His predilection for such pursuits appears to have been manifested at a very early period of his life, when he commenced the collection of plants and insects. From the perusal also of books of travels, and doubtless incited in some measure by what he saw amongst the sailors and shipping of all countries, with whom he was so continually brought in contact, he contracted a strong inclination for a seafaring life.

His father being a sensible man, and aware of the readiest mode of cure for such an inclination, judiciously sent his son, when 13 years of age, on a voyage to Jamaica. The vessel in which he sailed remained for some time off the island, and Ward, having little else to do, employed his time in studying the productions of the sea and shore. In a letter to Dr. Barker he says, "I never ceased admiring the various sea-birds, the Dolphin, and the Flying-fish. My idle time was occupied in sculling the jolly-boat to the edge of the coral reef which forms the outer margin of the harbour, and in ignorantly admiring the wondrous beauty of the vegetable and animal forms beneath." This amusement was varied by an occasional excursion into the interior of the island, the tropical vegetation of which (the Palms and Ferns especially) made an impression on his mind that was never effaced, and converted him from that time into an ardent and devoted botanist. The voyage, however, spite of these pleasant accompaniments, appears to have answered the purpose for which it was probably designed, and quite cured him of his love for a sailor's life. On his return to England he was apprenticed to the medical profession.

In the midst of his studies, as afterwards in the active performance of the duties of his profession, the love of plants was always maintained, and every opportunity that presented itself in the course of his professional studies was eagerly seized to increase his botanical knowledge. Of the opportunities thus met with, some of the most favourable were those afforded to Mr. Ward by Mr. Wheeler, at that time Lecturer on Botany to the Society of Apothecaries, in whose company, with other pupils and friends, he went on frequent herborizing expeditions. He was also often out alone by sunrise in the summer time at Shooter's Hill or Wimbledon, or elsewhere in the then open districts round London, made a collection of all the plants he could find, then back home and ready at the usual time for the serious business of the day; and these habits he continued throughout the greater part of his life.

It was, indeed, from this irrepressible love of plants that Mr. Ward was led to the admirable invention, as it may be termed, by which his name will ever be familiarly brought to mind—that of the Wardian Case. The following account of the way in which this was brought about cannot be better given than in the words of his affectionate biographer in the 'Gardeners' Chronicle.'

"The older friends of Mr. Ward will remember the house in

Wellclose Square, conspicuous amongst all in the neighbourhood by the vegetation about it. They will remember the little garden in front, the Vine running up the face of the house, every possible contrivance about the windows for the reception of plants, the Saxifrages, &c. on the roof, the small, well-stocked garden behind, the Fig-trees and the Virginian Creeper trained over the back of the residence. Attractive as the house and its belongings might have appeared to the casual visitor, constant disappointment and vexation awaited the owner in his efforts to keep up the appearance of verdure in the smoky atmosphere of the east end of London, and all the nursing bestowed upon the pets enabled them to maintain but a doubtful struggle with opposing influences. The soot and dust clogged up their tender lungs and impeded their respiration; the cold, dry winds carried off the vapour from their leaves and the moisture from the mould in which they were planted, and caused them to shrink and wither; the deleterious gases diffused through the smoke-cloud poisoned them. The only resource left was, on each occasion of a visit to the country, or to nursery grounds, to bring back a fresh relay of flowers, and thus maintain a fluctuating appearance of freshness and verdure. But Mr. Ward was to have his difficulties removed. In the summer of 1829 he had placed the chrysalis of a moth in some mould in a glass bottle covered with a lid, in order to obtain a perfect specimen of the insect. After a time a speck or two of vegetation appeared on the surface of the mould, and turned out to be a Fern and a Grass. His interest was awakened: he placed the bottle in a favourable situation, and found that the plants continued to grow and maintain a healthy appearance. On reflecting upon the matter, he found that in the bottle the conditions necessary to the life of the plants, as air, light, moisture, were maintained, and the deleterious influences already alluded to excluded. This parent closed or Wardian case soon gave birth to numerous others: the plan was tested, and its success demonstrated under varying conditions as regards the size and form of the cases and nature of the plants contained in them; and after a few years Mr. Ward had the satisfaction of feeling that, through his invention, he had been the means of introducing nature into the crowded city in the attractiveness and purity, if not on the extended scale, in which she exhibits herself in the country, and of effecting the transport of valuable plants to and from different parts of the world. Thousands of times, as he remarks, the hint must have been given to horticulturists and

botanists, in some incident similar to that which set him to think and act; and he admits that a more philosophic mind might sooner have arrived at results, which to him were of comparatively tedious growth; but at times, nature may be courted where she cannot be constrained, and love may prevail with her where science has failed.

"In 1836, Mr. Ward wrote a letter to the late Sir William J. Hooker, announcing his discovery; and the letter was published in the 'Companion to the Botanical Magazine' for May of that year. In 1838, Mr. Faraday lectured upon the subject to a large audience at the Royal Institution. In 1842, the first edition appeared of Mr. Ward's work 'On the Growth of Plants in closely glazed Cases,' and a second edition some years after, with illustrations by E. W. Cooke, R.A., and the late Mrs. S. H. Ward. A second lecture upon the subject was delivered at the Royal Institution by the writer of this notice in 1854. Mr. Ward himself, in a strikingly happy manner of his own, also explained his plan at various societies and at meetings of the British Association.

"The applications of the closed cases are well known to most people, but it may, nevertheless, be well here to notice them. They are:—

"1. The growth of plants in the dwellings of all classes. By their means, those who are destined to live in a smoke-charged atmosphere, and surrounded by walls and houses, are enabled at all times of the year to enjoy bright reminders of the country. The cases for this purpose may be made light and elegant, and at the same time expensive or not, according to the taste and means of the owner. Even for those who are not doomed to a town life the presence of beautiful plants or Ferns under the protection of these cases, in this country, where winter prevails for so many months of the year, is an unquestionable boon. To the sick room they are peculiarly adapted, giving the patients something cheerful to look at, and confining those exhalations which, when the plants are exposed, are often found to be unpleasant. To the inventor the most gratifying result was his having enabled the poor man to gratify, more completely than he previously could have done, one of his few luxuries, viz. the cultivation of plants. Mr. Ward was very earnest about this point, and during his stay at St. Leonard's, up to the time of his death, was engaged in drawing up some suggestions for improving, through the cases, and in other ways, the dwellings of the poor.

"2. For purposes of philosophical observation. One illustration

will suffice. By observation of the influence of light in determining the colour and development of plants, he would have inferred, had not his medical experience given him immediate proof, the effect of such influence upon human beings. But the combined experience, in reference both to plants and animals, enabled him to give strong evidence before a Committee of the House of Commons, when the window-tax was under consideration, and to take his share in effecting its removal.

"3. The application of the plan to animals. The vivarium was first established as a modification of the cases by Mr. Ward himself.

"4. The application of most importance to horticulturists is for the transport of plants to and from different countries. Under the old plan plants were either packed in boxes or allowed to grow during the voyage, exposed to various noxious influences; and the consequence was that a large percentage died in transit. By the closely glazed cases protection is afforded against the salt spray, the rough winds, and extremes of heat and cold, the light being at the same time admitted, and the water preserved. Thirty-five years have elapsed since the first two cases were taken out to Sydney by Captain Mallard, and brought back filled with Australian plants for the Messrs. Loddiges. Since then, the cases have superseded all other methods of conveying plants. Sir W. Hooker bore testimony, which his son will endorse, to service rendered in bringing over many of the most valuable plants in the Kew Gardens. Many years ago, Mr. Williams, the missionary*,

* "In the obituary of our old and esteemed friend Mr. N. B. Ward, given in your last issue, it is stated, as one of the many benefits arising out of the application of the closed cases bearing his name, that 'Mr. Williams, the missionary, by means of these cases, was enabled to establish the Banana (so important a food-plant) in one of the Navigator Islands, where it was previously unknown.' The statement is not correct, and misses a point which I should like to see brought out. Both Bananas and Plantains were not previously unknown in any of the Polynesian Islands, but existed there in a bewildering number of forms when Europeans first became acquainted with them. Solander, in his MSS. preserved at the British Museum, enumerated no less than twenty-eight different kinds as found in the Society Islands alone. The merit of Mr. Williams taking the Banana in a Wardian case to the Navigator Islands, where it already existed in superabundance, would therefore seem to be like taking coals to Newcastle or owls to Athens; but it was not quite so. What Williams really did, and where Ward's contrivance comes in for its full share of glory, was that he introduced the Chinese or Cavendish Banana, which certainly was previously unknown there; and if you will allow me to quote a passage from the eighth

by means of these cases, was enabled to establish the Banana, so important a food-plant, in one of the Navigator Islands, where it was previously unknown. Mr. Fortune conveyed in them 20,000 Tea plants from Shanghae to the Himalayas, and since then the Cinchona tree has through the same agency become established in India.

"Through the greater part of his life Mr. Ward was associated with the Apothecaries' Society of London, first in connexion with the Gardens at Chelsea, then as Examiner for the prizes in Botany; then as Master, when he endeavoured to bring the scientific element of the Society into prominence by giving two microscopical *soirées*, which have not since been surpassed there or elsewhere; and ultimately he filled the office of Treasurer. But he was always best known in the Society as the strenuous advocate of scientific progress, and was eminently conspicuous in the management and improvement of the garden at Chelsea, most of the recent improvements in which were made at his suggestion and under his superintendance.

"Those who visited Mr. Ward at his residence at Clapham Rise, in later years (and his house was open to all), will have a vivid recollection of the many botanical attractions there, whether under the protection of closed cases, or of his larger fern-house, or in the open air, in the unique and charming little garden at the back. Friends also who visited him will remember the pleasure and instruction which they derived from listening to his little histories

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part of my 'Flora Vitiensis,' just ready, you will see the great value of this introduction:—'An important addition to their stock of Musas the Vitians received in the Vudi ni papalagi (*i. e.* Foreign Banana), our *Musa chinensis* or *Cavendishii*, which the late John Williams, better known as the Martyr of Eromanga, brought in a Wardian case from the Duke of Devonshire's seat at Chatsworth to the Samoan or Navigator Islands, whence again, in 1840, the Rev. George Pritchard carried it to the Tongan or Friendly Islands, as well as to the Fijis. Its introduction has put an effectual stop to those famines which previously to this event were occasionally experienced in some of these islands.

"'Never attaining any greater height than 6 feet, and being of robust growth, this species is but little affected by the violent winds which often cause such damage amongst plantations of the taller kinds of *Musa*; and this advantage, coupled with the abundant yield of the plant and fine flavour of its fruit, have induced the natives to propagate it to such an extent that, notwithstanding its comparatively recent introduction, the Vudi ni papalagi numbers amongst the most common Bananas of the country.'"—*B. Seemann, in Gard. Chron.* June 27, 1868.

of the admirably dried and arranged specimens of plants he might show them, or to his demonstrations of what he happily called aspects of nature—plants grouped together so as to exhibit the effects of varying climatal conditions.

"Mr. Ward's health had been failing for some time, and he must have succumbed to an illness last winter, but for the unremitting ministrations of his daughters. He went to St. Leonard's in May, in the hope of recruiting his impaired health, and died there quite suddenly on the 4th of June, having nearly completed his 77th year. He was interred at Norwood cemetery on the 10th, in the presence of a large number of friends, amongst whom were Drs. Hooker and Wight, Mr. E. W. Cook, R.A., and many representives of the Apothecaries' Society, which he had served so long and so well. Mr. Ward was a good classical scholar, and, although more especially identified with botany, took a keen interest in other branches of science. He was a genial companion, full of anecdotes, which he related with much felicity; always cheerful in himself, and imparting his cheerfulness to those who came into contact with him. The editors of the 'Gardeners' Chronicle,' whose friendship he enjoyed for many years, and with whom all who knew him will agree, in noticing his death, speak of him as 'one of the gentlest, kindest, and purest of human beings;' and to this they add, that he was true in all the relations of life, and a quiet, practical Christian. His love of nature, leading him always up to the Creator, was his sustaining influence, and no one ever more fully realized all that Wordsworth has expressed in the following lines,—

> "Nature never did betray
> The heart that loved her; 'tis her privilege,
> Through all the years of this our life, to lead
> From joy to joy; for she can so inform
> The mind that is within us, so impress
> With quietness and beauty, and so feed
> With lofty thoughts, that neither evil tongues,
> Rash judgments, nor the sneers of selfish men,
> Nor greetings where no kindness is, nor all
> The dreary intercourse of daily life
> Shall ere prevail against us, or disturb
> Our cheerful faith, that all which we behold
> Is full of blessings."

—S. H. W.

"[To this sketch of the valuable but unobtrusive life of our

dear friend, we add the following remarks from the pen of Dr. Hooker, and can ourselves bear heartfelt testimony to the encouragement held out to young men by him whose loss we mourn:—]

"'Mr. Ward, whom I knew for full 30 years of my life, was as warm and steady a friend as I ever possessed; and it would be difficult to say which of the many excellent traits of his estimable character was most worthy of imitation—his love of truth, or his appreciation in others of generous qualities far inferior to his own; his unselfish regard for the happiness of those around him; or the absence of all vanity, littleness, and self-love; or his eager desire to promote the worthy aspirations of the young, and administer to the failing faculties of the old. He sought the acquaintance of youths especially for the purpose of fostering the tastes of those who took to natural history, and instilling the love of nature into those who did not, with the one object in both cases of rendering their lives the happier thereby; and he extended the same solicitude to the poorest of the poor with a zeal and singleness of purpose which would have appeared morbid in a man of less cultivated tastes or less scientific acquirements.'"

Some years since Mr. Ward quitted the residence he had so long occupied in Wellclose Square, and which has been so graphically and truthfully described above, and took a house and garden in the more congenial situation of Clapham Rise, where, though on no very extended scale, he had some scope for his tastes in gardening and what may be termed Practical Botany; and those "who," again to quote his son's expression, "visited Mr. Ward at this residence, will have vivid recollection of its numerous botanical attractions, whether under the protection of closed cases, or of his larger fern-house, or in the open air, in the unique and charming little garden at the back."

He became a Fellow of this Society in 1817, and of the Royal Society in 1852. In 1856 his numerous friends, in testimony of the sense universally entertained of Mr. Ward's merits, and of their respect and love, subscribed to erect the admirable memorial with which our walls are adorned, in the excellent and faithful portrait by Mr. J. P. Knight.

Richard Waring, M.D., of Marlings, near Chislehurst, Kent. Of this gentleman, who became a Fellow of the Society in 1824, I have been unable to obtain further information than that he died on the 21st of May 1868, aged 88.

John Windsor, F.R.C.S.E., was born at Settle, in Yorkshire, in the year 1787, and died in Manchester on the 1st of September 1868, having been a Fellow of the Society for 55 years. At an early period of life he manifested an ardent taste for botany, and such zeal in its pursuit that, in 1810, Sir James Smith mentioned his name in his 'English Botany' as that of an "assiduous young botanist;" and although for many years his favourite pursuit was interrupted by the imperative claims of a very extensive practice, he resumed them in later years with great ardour, added largely to his herbarium of British plants, and contributed several papers to the 'Phytologist,' and only a short time before his death had prepared for publication a 'Flora of Settle and the surrounding district.' His only contribution to our publications was "Short Notes on *Thlaspi alpestre*," which appeared in the Journal of the Society in 1868. But, besides these contributions to science, Mr. Windsor was the author of several papers in various medical periodicals, and was at one time editor of the 'Ophthalmic Review.'

Antonio Bertoloni was born at Sarzana, February 11, 1775. His father, who, like his grandfather and many of his ancestors, was an artillery officer, passed much of his time at Naples, where he died: his mother, Anna Cassoni, a lady of great ability and judgment, devoted herself zealously to the education of her son, who, having from his childhood evinced a remarkable predilection for the study of literature and mathematics, was sent by her, in 1792, to complete his studies in the University of Pavia. There he succeeded in obtaining the protection and good will of the Professors, more especially of J. P. Frank and Scopoli, the former of whom assisted him in his difficulties, receiving him as a son in his own house, and both encouraged him to study, in addition to his favourite pursuit of Mathematics, Medicine and Botany. From this time, principally under the guidance of Scopoli, Bertoloni began to collect the plants of the neighbourhood of Pavia, and to form an herbarium, which, however, was eventually lost in the sacking of that city by the French, an event which compelled young Bertoloni and the other students to quit the city. He next removed to Genoa, where, in the year 1796, he obtained his degree in medicine. Thence he passed to Sarzana, where he commenced the practice of medicine, and married, in the year 1801, Signora Maddalena Fenucci.

In this period of his life he devoted himself most assiduously

to the study of the plants of his native country, and began to make himself known to botanists by the publication of his 'Plantæ Genuenses' (1804), and of his Decades of the rare plants of Liguria, and afterwards of Italy (1803–1810), in which he described some new and rare species of Italian plants. But his love for Botany found a richer field during a second sojourn in Genoa (where he went in the year 1811, to be nominated Professor of Physics at the Lyceum) under the splendid protection of the Marquis Hippolito Durazzo, who entrusted to him the charge of his beautiful garden at Zerbino, and spared neither trouble nor expense in introducing, at the suggestion of Bertoloni, the rarest and most beautiful plants from England and Holland.

But another and more important opportunity soon offered for dedicating himself entirely to his favourite science, viz. his appointment in April 1815, at the suggestion of Professor Gaetano Savi of Pisa, to the Chair of Botany and the direction of the Royal Botanic Garden attached to the University of Bologna. With greater facilities than he had hitherto possessed, he now devoted himself to the study of the plants of his native country, and set about the execution of an idea which had been suggested to him when in Pavia by the illustrious Professor Scopoli, viz. that of preparing a general Italian Flora. As a Prodromus to this work, in addition to the labours above mentioned, appeared his 'Amœnitates Italicæ' (1819), a work which comprised, besides a reprint of the Decades of the Italian plants, a Flora of African plants, subsequently followed by a Mantissa (1833), the 4th Decade of the Italian plants (1818), a work on some Fuci of the Italian sea (1818), the description of the Italian Crocuses (1826), and many memoirs on new species of Italian plants (1817–32). With amazing perseverance, regardless alike of expense and labour, he obtained from all the Italian botanists and lovers of the science dried plants from various points of the Peninsula and adjacent islands, which he had not himself been able to visit, thus forming a grand Italian herbarium, the richest of its kind in our time, and especially valuable on account of the authenticity of the specimens received from the most distinguished native botanists. Thus he was enabled to enter upon the printing of his 'Flora Italica,' published in 10 vols. 8vo, from 1833 to 1854, and which was followed by the 'Flora Italica Cryptogama,' comprising the Algæ, Lycopodiaceæ, Filices, and Hepaticæ, published in the

years 1858 to 1862. Many, perhaps, as remarked by Parlatore, will disapprove his having followed in this work the system of Linnæus rather than the natural method, and consider that the work is not in all respects on a level with the recent progress of science; but it must, nevertheless, be admitted that Bertoloni has conferred a most valuable boon upon science and his country, in being the first to erect such a monument as the 'Flora Italica,' a work abounding in many excellencies, among which may be specially mentioned the uniformity of plan on which it has been conducted, the sound judgment generally exercised in the distinction of genera and species, the exactitude of the synonymy, the elegance of the descriptions, the pure latinity, and profound knowledge of the Latin classics, with which he commemorates and illustrates the Italian plants mentioned in their works.

Notwithstanding the heavy demands made upon him by his various works in connexion with the Italian Flora, Bertoloni did not neglect the study of foreign plants, as is shown by the 24 Nos. of his 'Miscellanea Botanica' (1842–51), his 'Florula Guatimalensis,' his 'Plantæ Novæ Asiaticæ' (1864–65), and others. He also wrote upon many plants mentioned by ancient authors, Éloges upon Marcello Malpighi (1830), O. T. Tozzetti (1837), on the Cav. Ippolito Durazzo and his noble lady (1840), and on Camillo Razani (1844); published his Lectures on Botany (1823), Description of the Botanic Garden, Bologna (1824), and on an infinity of other subjects relating to Botany, for the most part in Latin, and displaying great erudition and elegance of style. Being thoroughly conversant with the works of Latin authors, he formed a rich and well-selected library of their most valuable works, one of the best of the kind in existence. He wrote also on various subjects, historical, literary, and agricultural, *e. g.*, on the plants which infest the cornfields of the province of Bologna (1867), and others, retaining to the very close of life the freshness of his mental powers*.

He died on the 17th of April, 1869, shortly after completing his 94th year.

* As a proof of this activity of mind, Bertoloni, as I am informed by Mr. Ball, although for the greater part of his long life satisfied with those characters in plants which are obvious to the naked eye, when upwards of 80 became a convert to the necessity of more minute investigation, and possessed himself of a compound microscope, which was doubtless largely employed in his cryptogamic studies.

Bertoloni had a marvellous memory, and till within a month of his decease was able to recite verses written by his former master, Prof. Sanguinetti di Chiavari, in the years of his early youth. He was ever ready to help others in their labours, and "I should be wanting in my duty," says his biographer, Prof. Parlatore, in the Memoir* from which the above particulars have been obtained, "were I not to devote to him a word of praise and gratitude for having assisted me in my work, the 'Flora Italiana,' as well as for the loan of some new or rare plants described by him. His frendship for me," adds Prof. Parlatore, "remained untroubled by the slightest cloud, notwithstanding that we both were engaged upon a similar work, although with a somewhat different scope."

Professor Bertoloni was elected a Foreign Member of this Society in the year 1835. He does not appear ever to have contributed a paper to our Transactions; but the Library is indebted to him for a pretty complete series of his botanical works, and for several entomological memoirs by his son Giuseppe.

Karl Friedrich Phillip von Martius, M.D., a Foreign Member of the Royal Society, was born at Erlangen on the 17th April, 1794, and died on the 13th December, 1868. The family to which he belonged traced its descent from Galeottus Martius, a Professor at Padua in the middle of the fifteenth century, whence he was compelled to fly, for political reasons, to the Court of Matthias Corvinus, where he obtained the post of Counsellor and Librarian. From Hungary the family spread through Germany in an almost uninterrupted line of able ministers and men of letters, while some of the later members became distinguished in the paths of Natural History and especially in Botany, as, for instance, his great uncle Heinrich von Martius, who published a 'Flora of Moscow,' and his father Ernst Wilhelm, likewise a botanical author and one of the three founders of the Royal Bavarian Botanical Society, Ratisbon. His education, which was commenced at home, chiefly under an excellent mother, was continued in the Gymnasium at Erlangen, where, under Professors Richter and Esenbeck, he acquired a profound knowledge of the classical languages and literature, afterwards of great service to him, as his works were almost all written in the Latin language.

In 1810, when barely sixteen, he entered the higher University of his native town, devoting himself to the study of medicine, but

* Nuovo Giornale Botanico Italiano, vol. i. no. 2. Maggio, 1869.

still cherishing a decided partiality for natural science and especially for Botany, which was at that time taught at Erlangen by Professor Schreber, who had been a student under Linnæus himself. And in 1812 he conceived the idea of entirely giving up Medicine for Botany, being mainly induced to this by the invitation he received through Schrank and Spix to undertake the Assistant Curatorship of the newly established Botanical Garden at Munich. After the necessary preparation and passing the requisite examination he entered upon this office in 1814. But before quitting Erlangen he obtained his Doctor's Degree, for which his thesis was entitled 'Plantarum Horti Academici Erlangensis Enumeratio,' in which the plants were arranged according to the Linnean method. The next two years were devoted principally to the duties of the garden, to zealous study, and occasional botanical trips. And during this period he also commenced the publication of a 'Flora Cryptogamia Erlangensis,' but was unable to see it through the press owing to his being appointed to go to Brazil. Its completion consequently was intrusted to his friend and fellow pupil Nees von Esenbeck the elder.

On the occasion of the matrimonial alliance between the Grand Duchess Leopoldina and the Crown Prince of Portugal, afterwards Don Pedro I. of Brazil, the Austrian Government equipped a scientific expedition in the retinue of the bride, to which, at the instance of the king of Bavaria, the Academicians Spix and Von Martius were attached, the former as zoologist and the latter as botanist.

On the 2nd of April, 1817, the squadron intended to convoy the imperial bride and her suite to the new world, sailed from Trieste, and after several stoppages at Malta, Gibraltar, &c., reached Rio de Janeiro on the 15th July. Here the Bavarian and Austrian naturalists separated, and each started in different directions.

The plan projected by the Bavarian Academy embraced the exploration and investigation, so far as might be possible, of the whole of the vast territory of Brazil, then almost unknown to science, and their explorers were directed to penetrate the principal provinces in the most circuitous routes. Following these directions, Spix and Von Martius betook themselves at once to the interior, and after passing through a vast extent of country, amidst many difficulties and dangers, finally emerged from the interior at Bahia on the 10th November, 1818. After two months'

rest they resumed their travels through the more northern provinces of the empire, including the districts of the Amazon, and in November of the following year, 1819, reached the town of Ega at the mouth of the tributary stream Hyapurá, where they parted company, Spix continuing his explorations on the main waters as far as Tabatinga on the confines of Peru, whilst Von Martius sailed up the Hyapurá as far as the frontier of New Granada, till stopped by the Cataracts of Araracoara. The travellers met again on the Rio Negro and sailed together down the river to Pará, which place was reached on the 16th of April, 1820, and quitted on their return voyage to Europe on the 14th June. They did not, however, reach Munich before the 8th of December.

This expedition, exclusive of the sea voyage, extended over nearly 1400 geographical miles, and was conducted through the most inhospitable and dangerous regions of the New World. Both explorers nevertheless escaped without any important disaster, and had, moreover, the good fortune to preserve and bring home, complete and uninjured, the valuable and extensive collections they had made.

These collections included about 6500 species of plants, the majority dried; but several living species as well as seeds were also brought home. The zoological specimens, to which Von Martius had largely contributed on his solitary voyage up the Hyapurá, numbered 85 species of Mammals, 130 Amphibia, 350 Birds, 116 Fishes, 2700 Insects, 80 Arachnoids, and 80 Crustacea. The various species of both animals and plants, and especially the latter, were represented by many and often numerous specimens.

On their return to Munich, as might be expected, the travellers were greeted with honour and applause, and both were at once nominated Knights of the Order of Civil Merits; and Von Martius received the perhaps more substantial token of the Royal esteem in being appointed, a few days after his arrival, Ordinary Member of the Academy of Sciences and second Conservator of the Botanical Gardens. Thus at the early age of 26 we find him already fully established in public reputation, and placed in a situation in which he had full scope for the indulgence of his inclinations and the prosecution of his botanical studies under the greatest advantages.

Henceforward the principal object of Von Martius's life was to elaborate the abundant materials he had collected in his Brazilian expedition.

The first work brought out relative to this expedition was the 'Narrative of the Journey,' which appeared in three 4to volumes between 1823 and 1831, accompanied with an atlas. As Spix did not long survive the completion of the first volume, the greater portion of the work is due to Von Martius alone. This work has been recognized as of equal importance, as respects Brazil, with Humboldt's writings on other parts of the South American continent, and indeed, in the copiousness of its information, on the geography, ethnology, statistics, and natural history of that country, cannot fail to excite our warmest admiration. Mr. Bates, the present Assistant Secretary of the Royal Geographical Society, who explored the Amazons for 1400 miles in the track of the great traveller, whose narrative he carefully studied, has expressed his astonishment at the extent and accuracy of the information acquired by him during so rapid a journey. As regards the style in which it is composed, it is sufficient to say that it has met with the highest commendation from no less a critic than Goethe, who was a frequent correspondent of Von Martius. In further proof of its excellence in this respect, it may be also stated that many of the sketches of scenery and manners contained in it have been admitted into German prose selections. But as a "narrative" of travels, intended for general perusal, it could not contain the special details of various scientific subjects; these were reserved for a separate work, which appeared contemporaneously in a magnificent series of volumes. Owing to the death of his coadjutor Spix, who was able only to work out the mammalia, the completion of the zoological portion, as well as of the botanical, fell into the hands of Von Martius, who has well acquitted himself in so difficult a task, owing in part probably to his having had the good sense to secure the assistance of Agassiz, Andreas Wagner, and other zoologists for the actual work, whilst he conducted the editing of it. But this was no small labour, involving, as it did, the superintendence of the publication of four large folio volumes.

The botanical materials were elaborated in the form of a selection of the most interesting novelties, the Phanerogamia being illustrated in the 'Nova Genera et Species Plantarum Brasilien-

sium' in three folio volumes, and the Cryptogamia in the 'Icones Selectæ Plantarum Cryptogamicarum Brasiliensium' in one volume.

In the compilation of these volumes, however, he was assisted, as regards the first, by his colleague Zuccarini, and as respects the structure of the stem of Tree-ferns, by Hugo Von Mohl. In these volumes upwards of 400 species and 70 genera are described. The publication of these magnificent contributions to science obtained the admission of Von Martius as Member of the French Institute. About the same time, Von Martius, not content with the labour demanded from the editor of the works just mentioned, commenced a third, and, indeed, the one with which his name will always perhaps be most closely connected, his 'Historia Naturalis Palmarum,' the publication of which, in three volumes imperial folio, commenced in 1823, was not completed till 1850. This work, unlike the others, is not confined to the products of Brazil alone, but embraces the entire family of Palms throughout the world. In its elaboration he was also aided in special portions by various fellow labourers; as, for instance, the chapter on the anatomy of Palms was written by H. Von Mohl, whilst the account of fossil species is given by Unger, and the morphology by Sendtner and A. Braun; but by far the greater part proceeded from the pen of Von Martius himself, embracing the geographical distribution, in which occasion is taken to convey his views on phyto-geography in general, and the whole of the third volume, containing descriptions of all known Palms systematically arranged, and thus forming in itself an almost complete monograph of the Family.

Another of the great works connected with the Brazilian expedition, projected and in large measure executed by Von Martius, is the 'Flora Brasiliensis.' This magnificent work, which has already reached its 46th Part, is a noble monument of German industry, and the greatest ever undertaken in the interests of botanical science, as may be judged of from the statement that, even in its present state, there are described in it nearly 10,000 species, illustrated by more than 1100 folio plates.

The mere enumeration of his other writings would fill several pages, amounting as they do to more than 150 separate memoirs, in which abundant evidence is afforded of the extraordinary versatility and powers of observation of the author.

On his return from Brazil, as has been stated, Von Martius was nominated Ordinary Member of the Academy, and Second Conservator of the Botanic Garden. For some time his position remained unchanged; but when the University of Landshut was removed to Munich about 1826, he was appointed Professor of Botany in that institution, and six years afterwards, on the retirement of Schrank, succeeded him as First Conservator of the Garden. He continued to perform the duties of both offices till 1854, and to universal satisfaction in both. A ready perception of the beautiful rendered his lectures no less graceful than instructive; hosts of students flocked to his lecture-room and as eagerly accompanied the professor through field and glade.

As regards his duties to the Botanic Garden, Von Martius, with a very trifling allowance, succeeded in making it a model establishment, and continued to take the greatest interest in it up to 1854, when the greater part of the result of his unwearied exertions and skill was marred by the erection within the precincts of the garden of a glass palace for an Industrial Exhibition. From that time he naturally ceased to take much interest in the place.

Whatever honours the scientific world could offer, Von Martius received. A member of nearly all the academies and learned bodies in Europe, he rejoiced in the esteem and friendship of his most distinguished contemporaries; plants and animals, and even a mountain in New Zealand, have been named after him, and on the occasion of his jubilee on the 30th of March, 1864, the fiftieth anniversary of the day on which he was invested with the degree of Doctor, he received what might be called an offering from the whole educated world. A medal was struck in his honour with the inscription "*Palmarum patri dant lustra decem tibi palmam.*" "*In Palmis resurges.*" And on the 15th of December, 1868, when his coffin was lowered into its resting-place, it was fitly decorated with—Palm Leaves.

The Secretary also announced that twenty-eight Fellows, and two Foreign Members had been elected since the last Anniversary.

At the Election which subsequently took place, George Bentham, Esq., was re-elected President; William Wilson Saunders, Esq., Treasurer; and Frederick Currey, Esq., and Henry T. Stainton, Esq., Secretaries. The following five Fellows were elected into the Council, in the room of others going out, viz.:—H. C. Bastian,

M.D., Arthur Grote, Esq., R. C. Alexander Prior, M.D., H. T. Stainton, Esq., and Thomas Thomson, M.D.

On the motion of Mr. Stainton, seconded by Mr. M'Lachlan, it was unanimously resolved that the Cordial Thanks of the Society be given to Mr. Busk, for the eminent services which he has rendered to the Society, as its Secretary, during the last twelve years.

A letter having been read from Lady Smith, offering for the acceptance of the Society, a beautifully carved Rhinoceros-horn, which had been sent to Linnæus from China, by Lagerström, and described in the 'Amœnitates Academicæ,'—Resolved, that the Special Thanks of the Society be presented to Lady Smith for this very valuable addition to the Memorials of Linnæus already in the possession of the Society.

Mr. Edgeworth, on the part of the Auditors of the Treasurer's Accounts, read the Balance-Sheet, by which it appears that the total Receipts during the past year, including a Balance of £378 16*s.* carried from the preceding year, amounted to £1999 7*s.* 7*d.*, and that the total Expenditure during the same period amounted to £1618 3*s.* 3*d.*, leaving a Balance in the hands of the Bankers of £381 4*s.* 4*d.*

June 3rd, 1869.

Present.

George Bentham, Esq., President, in the Chair.

Edward Saunders, Esq., was elected a Fellow.

The President nominated J. J. Bennett, Esq., George Busk, Esq., J. D. Hooker, M.D., and W. W. Saunders, Esq., Vice-Presidents for the ensuing year.

The following Papers were red:—

1. "Notes on the *Thysanura*," Part 4; by Sir John Lubbock, Bart., F.R.S. & L.S.

2. "Monograph of the Genus *Polymorphina*;" by H. B. Brady, Esq., W. K. Parker, Esq., and T. R. Jones, Esq.

3. Letter from Herr Fritz Müller to Mr. Darwin, on the transformation of stamens into stigmata in a species of *Begonia*.

June 17th, 1869.

Present.

W. Wilson Saunders, Esq., Vice-President, in the Chair.

John Tanner, M.D., and G. R. Tate, M.D., were elected Fellows.

Mr. Redhead, F.L.S., exhibited a specimen of *Leptopetion Alexandrinum*, Schott (*Biarum*, Boiss.), found by Mr. Hurst at Ramleh, near Alexandria.

Mr. W. G. Smith, F.L.S., exhibited specimens of a new British Agaric, *Agaricus* (*Tricholoma*) *brevipes*, Fries, collected by the Rev. H. H. Gillett, at Melton Mowbray, where it is eaten in large quantities.

The following Papers were read:—

1. "Enumeration and Description of Plants of the Order *Bignoniaceæ*, collected by M. Joaquim Correa de Méllo in the province of San Paulo, Brazil;" by Edward Bureau, M.D.

2. "On *Gœtzia* and *Espadea*;" by John Miers, Esq., F.R.S. & L.S.

3. "Contributions towards a Knowledge of the *Curculionidæ*;" by F. P. Pascoe, Esq., F.L.S.

Receipts and Payments of the Linnean Society from May 1, 1868, *to April* 30, 1869.

	£	*s.*	*d.*	£	*s.*	*d.*
Balance in the hands of the Bankers at the last audit ...				378	16	0
Admission Fees	156	0	0			
Compositions	510	0	0			
Annual Contributions of £2 2*s.*	35	14	0			
Do. do. of £3 0*s.*	603	3	0			
Transactions, Journal, &c. sold	240	11	11			
Interest on Consols and other Investments	62	7	10			
Expenses of warming, lighting, tea, &c., repaid by other Societies	12	14	10			
				1620	11	7
				£1999	7	7

	£	*s.*	*d.*
Insurance	10	10	0
Repairs and Furniture	26	17	3
Coals, Gas, Tea, Postage, &c.	115	11	5
Salaries	215	0	0
Expenses of the Society's Publications	1167	3	9
Books purchased	43	15	2
Bookbinding and Stationery	18	15	2
Commission	20	10	6
	£1618	3	3
Balance in the hands of the Bankers	381	4	4
	£1999	7	7

W. WILSON SAUNDERS, *Treasurer.*

The foregoing Accounts have been examined, and the Balance in hand found to be correctly stated at £381 4*s.* 4*d.*

GEORGE BENTHAM, *President.*
ROBERT HUDSON,
THOMAS BOYCOTT,
M. P. EDGEWORTH,
GEORGE BUSK,
FREDERICK CURREY.

May 20th, 1869.

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RECEIVED FROM JUNE 21, 1868, TO JUNE 15, 1869.

	Titles.	Donors.

Academies and Societies.

Adelaide, S. A.:—

Philosophical Society.

Annual Report and Transactions for the year ending Sept. 30, 1867. 4to. Adelaide, 1867. The Society?

Amsterdam:—

Kon. Akademie van Wetenschappen.

Verhandelingen. Deel 11. 4to. Amsterdam, 1868.

Verslagen en Mededeelingen. Afdeeling Natuurkunde. 2de Reeks, Deel 2. 8vo. *Ibid.*, 1868.

——. Afd. Letterkunde, Deel 11. 8vo. *Ibid.*, 1868.

Jaarboek voor 1867. 8vo. *Ibid.*

Catalogus van de Boekerij der Akademie, Deel 2, Stuk 2. 8vo. *Ibid.*, 1868.

Processen Verbaal van de gewone Vergaderingen der Akademie, &c. Afd. Natuurkunde, van Mai 1867–April 1868. 8vo. (*Ibid.*) The Academy.

Basel:—

Naturforschende Gesellschaft.

Verhandlungen, Theil 5, Heft 1. 8vo. Basel, 1868.

The Society

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Berlin :—

Königl. Preuss. Akademie der Wissenschaften.

Abhandlungen, aus dem J. 1867. 4to. Berlin, 1868.

Monatsberichte, von Januar–Dec. 1868, und Jan. & Feb. 1869. 8vo. *Ibid.* THE ACADEMY.

Vercin zur Beförderung des Gartenbaues in den Kön. Preussischen Staaten.

Wochenschrift. Redakteur, Prof. Dr. Karl Koch. Jahrg. 11, Nos. 1–52. 4to. Berlin, 1868. THE SOCIETY.

Bonn :—

Naturhistorischer Verein der Preussischen Rheinlande, &c.

Verhandlungen, Jahrg. 25. 8vo. Bonn, 1868.

THE ASSOCIATION.

Bordeaux :—

Société des Sciences Physiques et Naturelles.

Mémoires, Tome 5, Cah. 3, & Tome 6, Cah. 1 & 2. 8vo. Paris & Bordeaux, 1867–69.

Extraits des Procès-Verbaux & Bulletin Bibliographique. 8vo. *Ibid.*, 1867. THE SOCIETY.

Boston, Mass. :—

American Academy of Arts and Sciences.

Memoirs. New Series, Vol. 9, Pt. 1. 4to. Cambridge and Boston, 1867.

Proceedings. Vol. 7, pp. 185–344. 8vo. (*Ibid.*, 1866–67.) THE ACADEMY.

Society of Natural History.

Memoirs. Vol. 1, Pt. 3. 4to. Boston, 1868.

Proceedings. Vol. 11, Sheets 7–31 (end). 8vo. *Ibid.*, 1866–68.

Condition and Doings of the Society, as exhibited by the Annual Reports of the Custodian, &c. 1867 & 68. 8vo. *Ibid.*, 1867–68.

Annual of the Society, 1868–69 (I.) 8vo. *Ibid.*, 1868. THE SOCIETY.

Breslau :—

Schlesische Gesellschaft für Vaterländische Cultur.

Abhandlungen. Abth. für Naturwissenschaften und Medicin, 1867–68. 8vo. Breslau, 1868.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Breslau (*continued*) :—

Schlesische Gesellschaft für Vaterländische Cultur.

Jahresbericht (45) für 1867. 8vo. *Ibid.*, 1868.

Verzeichniss der in den Schriften der Gesellschaft von 1804 bis 1863 enthaltenen Aufsätze. 8vo. *Ibid.*

THE SOCIETY.

Brünn, Austr. :—

Naturforschender Verein.

Verhandlungen, Band 6. 8vo. Brünn, 1868.

THE ASSOCIATION.

Brussels :—

Académie R. des Sciences de Belgique.

Mémoires. Tome 37. 4to. Bruxelles, 1869.

Bulletin. 2e Série. Tomes 25 & 26. 8vo. *Ibid.*, 1868.

Annuaire. 35e année. 12mo. *Ibid.*, 1869.

THE ACADEMY.

Observations des phénemènes périodiques, pendant 1865 & 1866. (Mémoires, tome 37). 4to. M. QUETELET.

Observatoire Royal. Annales Météorol. See **Quetelet.**

Société Royale de Botanique de Belgique.

Bulletin. Tome 6, No. 3, & Tome 7, Nos. 1–3. 8vo. Bruxelles, 1868–69. THE SOCIETY.

Buenos Ayres :—

Museo Público.

Anales del M. P., para dar a conocer los objetos de la Historia Natural nuevos o poco conocidos, conservados en este Establecimiento ; por German Burmeister, M.D., &c. Entrega 5. 4to. Buenos Aires, 1868.

THE EDITOR ?

Calcutta :

Asiatic Society of Bengal.

Journal. New Series. Nos. 143–152. 8vo. Calcutta, 1868–69.

Proceedings. Nos. 1–10 & 12 for 1868, and Nos. 1 & 4 for 1869. 8vo. *Ibid.* THE SOCIETY.

TITLES.	DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Cambridge, Mass. :—

Museum of Comparative Zoology, Harvard College.

Annual Report of the Trustees: together with the Reports of the Directors, 1866 & 1867. 8vo. Boston, 1867–68.

Bulletin. Vol. 1. pp. 71–120. 8vo. *Ibid.*, 1867.

THE TRUSTEES?

Chicago :—

Academy of Sciences.

Transactions. Vol. 1, Pt. 1. 4to. Chicago, 1867.

THE ACADEMY.

Copenhagen :—

Botaniske Forening.

Botanisk Tidsskrift: udgivet af den B. F., ved Dr. P. Heiberg, &c. Bind 2, Heft 1–4, & Bd. 3, Hft. 1. 8vo. Kjöbenhavn, 1867–69. PURCHASED.

Cornwall :—

R. Cornwall Polytechnic Society.

Annual Report (36th). 8vo. Falmouth, 1868.

THE SOCIETY.

Devonshire :—

Association for the Advancement of Science, Literature, and Art.

Report and Transactions. Vol. 2, Pt. 2. 8vo. London, 1868. THE ASSOCIATION.

Dresden :—

Academia Cæs. Germanica Naturæ Curiosorum.

Nova Acta. Tom. 34. 4to. Dresdæ, 1868.

THE ACADEMY.

Dublin :—

Royal Dublin Society.

Journal. No. 37. 8vo. Dublin, 1868. THE SOCIETY.

Edinburgh :—

Botanical Society.

Transactions, Vol. 9, Pt. 2. 8vo. Edinburgh, 1868.

THE SOCIETY.

Titles.	Donors.

Academies and Societies (*continued*).

Edinburgh (*continued*) :—

Royal Society.

Transactions, Vol. 25, Pt. 1. (Session 1867–68.) 4to. Edinburgh.

Proceedings, Session 1867–68. (Vol. 6, Nos. 74–76.) 8vo. (*Ibid.*) — The Society.

Royal Physical Society.

Proceedings, Session 1862–63 and 1865–66. 8vo. Edinburgh. — The Society.

Geneva :—

Société de Physique et d'Histoire Naturelle.

Mémoires, Tome 19, Ptie. 2. 4to. Genève, 1868. — The Society.

Göttingen :—

Königl. Gesellschaft der Wissenschaften.

Nachrichten, aus dem J. 1868. 12mo. Göttingen, 1868. — The Society.

Harlem :—

Société Hollandaise des Sciences.

Archives Néerlandaises des Sciences Exactes et Naturelles ; rédigées par E. H. von Braumhauer, Secr., &c. Tomes 1–3. 8vo. La Haye, 1866–68.

Liste des publications des Sociétés Savantes, &c., ainsi que des journaux scientifiques, qui se trouvent dans la Bibliothèque de la Société. 8vo. Harlem, 1869. — The Society.

India :—

Forest Reports.

Report of Forest Administration in British Burmah, 1866–67, by H. Leeds, Esq. Fcap. fol. Calcutta, 1868.

Report on Forest Administration in the Province of Oudh, 1866–67, by F. Read, Esq. Fcap. fol. *Ibid.*, 1868.

Report on Insects destructive to Woods and Forests, by R. Thompson. 8vo. Allahabad, 1868. — Secretary of State for India.

Lausaune :—

Société Vaudoise des Sciences Naturelles.

Bulletin, Nos. 56, 59, 60 & 61. 8vo, Lausanne, 1866–69. — The Society.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Leeds :—

Philosophical and Literary Society.

Report (48th) of the Council. 8vo. Leeds, 1868.
THE SOCIETY.

Leyden :—

Musei Botanici Annales. See **Miquel,** *F. A. G.*

Nederlandsche Entomologische Vereeniging.

Tijdschrift voor Entomologie; onder redactie van Prof. J. van der Hoeven, Dr. A. W. M. Van Hasselt, &c. Serie 2. Deel 3, Afl. 2–6, & Deel 4, Afl. 1. 8vo. Gravenhage, 1867–69. THE ASSOCIATION.

Liége :—

Société Royale des Sciences.

Mémoires. 2e Série. Tome 2. 8vo. Liége, 1867.
THE SOCIETY.

Liverpool :—

Literary and Philosophical Society.

Proceedings, Nos. 20, 21, & 22. 8vo. London, 1866–68.
THE SOCIETY.

London :—

British Association for the Advancement of Science.

Report of the 37th Meeting, held at Dundee, Sept. 1867. 8vo. London, 1868. THE ASSOCIATION.

Clinical Society.

Transactions, Vol. 1. 8vo. London, 1868. THE SOCIETY?

Entomological Society.

Transactions. 3rd Series, Vol. 3, Pts. 5 & 6, Vol. 4, Pts. 4 & 5, Vol. 5, Pt. 8, Pts. 1–5 for 1868, and Pt. 1 for 1869. 8vo. London, 1868–69. THE SOCIETY.

Geological Society.

Quarterly Journal, Vol. 24, Pts. 3 & 4, and Vol. 25, Pts. 1 & 2. 8vo. London, 1868–69.

List of Members, November 1, 1868. 8vo. THE SOCIETY.

Palæontographical Society's Publications, Vols. 21 & 22. 4to. London, 1868–69 (including) :—

1. **Binney,** *E. W.* Flora of the Carboniferous Strata, Part 1.
2. **Davidson,** *Thomas.* British Fossil Brachiopoda, Pt. 7, No. 3 (Silurian).

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

London (*continued*) :—

Palæontological Society's Publications (*continued*) :—

3. **Dawkins,** *W. B.*, and **Sanford,** *W. A.* British Pleistocene Mammalia, Pts. 2 & 3.
4. **Duncan,** *Martin.* Monograph of British Fossil Corals. 2nd Series, Pt. 2, No. 1 (Cretaceous).
5. **Duncan,** *P. M.* Supplement to the British Fossil Corals. Pt. 4, No. 2.
6. **Owen,** *Richard.* British Fossil Reptilia from the Kimmeridge Clay. No. 3.
7. **Phillips,** *John.* Monograph of British Belemnitidæ. Part 4.
8. **Powrie,** *J.*, and **Lankester,** *E. R.* Fishes of the Old Red Sandstone, Part 1.
9. **Woodward,** *Henry.* Monograph of British Fossil Crustacea belonging to the Order Merostomata, Pt. 2.
10. **Wright,** *Thomas.* British Fossil Cretaceous Echinodermata, Vol. 1, Pt. 2. PURCHASED.

Pharmaceutical Society.

Pharmaceutical Journal and Transactions. 2nd Series. Nos. 109–120. 8vo. London, 1868–69. THE SOCIETY.

Quekett Microscopical Club.

Journal, Nos. 3–6. 8vo. London, 1868–9.

Report, 3rd, and List of Members. 8vo. *Ibid.*, 1868. THE CLUB.

Ray Society.

Brown (Robert), Miscellaneous Botanical Works. Vol. 3. Atlas of plates. Fol. London, 1868. PURCHASED.

Royal Society.

Philosophical Transactions, Vol. 157, Pt. 2, and Vol. 158, Pt. 1. 4to. London, 1867–68.

Proceedings, Nos. 103–111. 8vo. *Ibid.*, 1868–69.

Catalogue of Scientific Papers (1800–63). Vol. 2. 4to. *Ibid.*, 1868. THE SOCIETY.

Royal Agricultural Society.

Journal. 2nd Series. Vol. 4, Pt. 2, and Vol. 5, Pt. 1. 8vo. London, 1868–69. THE SOCIETY.

Royal Asiatic Society of Great Britain and Ireland.

Journal, New Series, Vol. 3, Part 2. 8vo. London, 1868. THE SOCIETY.

	TITLES.	DONORS.

ACADEMIES AND SOCIETIES (*continued*).

London (*continued*) :—

Royal College of Physicians.

List of Fellows, Members, &c. 8vo. London, 1869. THE COLLEGE.

Royal Geographical Society.

Journal, Vol. 37. 8vo. London, 1867.

Proceedings, Vol. 12, Nos. 2–5, and Vol. 13, Nos. 1 & 2. 8vo. *Ibid.*, 1868–69. THE SOCIETY.

Royal Horticultural Society.

Journal, New Series, Vol. 2, Pt. 6. 8vo. London, 1869.

Proceedings, New Series, Nos. 11 & 12. 8vo. *Ibid.* 1868–69. THE SOCIETY.

Royal Institution.

Proceedings, Vol. 5, Pts. 3–5 (Nos. 47–49). 8vo. London, 1868–69.

Additions to the Library, No. 11. 8vo. *Ibid.*, 1868.

List of the Members, &c., with the Report of the Visitors. 8vo. *Ibid.* 1868. THE INSTITUTION.

Royal Medical and Chirurgical Society.

Medico-Chirurgical Transactions, Vol. 51 (=2nd Series, Vol. 33). 8vo. London, 1868.

Proceedings, Vol. 6, Nos. 2 & 3. 8vo. *Ibid.*, 1868–69. THE SOCIETY.

Royal Microscopical Society.

Monthly Microsc. Journ. See **Journals.**

Society of Arts.

Journal, Nos. 798 & 813–864. 8vo. London, 1868-69. THE SOCIETY.

Zoological Society.

Transactions, Vol. 6, Pts. 6 & 7. 4to. London, 1868.

Proceedings of the Scientific Meetings (with Illustrations). Parts 1–3, for 1868. 8vo. *Ibid.* THE SOCIETY.

Lund :—

University.

Acta Universitatis Lundensis. Års-skrift. Medicinska-, Mathematik-, och Naturvetenskaper. 4to. Lund, 1866–67. THE UNIVERSITY.

TITLES.	DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Lyon :—

Académie Imp. des Sciences.

Mémoires (Nouvelle Série). Classe des Lettres. Tome 13. 8vo. Paris, &c., 1866–68. THE ACADEMY.

Société Linnéenne.

Annales. Nouvelle Série, Tomes 11, 15 & 16. 8vo. Paris, 1865–68. THE SOCIETY.

Madrid :—R. Academy of Sciences. See **Alfonso X.**

Montreal :—Canadian Naturalist, &c. See **Journals.**

Moscow :

Société Imp. des Naturalistes.

Bulletin. Tome 40, Nos. 3 & 4, and Tome 41, Nos. 1 and 2. 8vo. Moscou, 1867–68. THE SOCIETY.

Munich :

Kön. Bayerische Akademie der Wissenschaften.

Sitzungsberichte. Jahrg. 1867, Bd. 2, Hft. 4, & Jahrg. 1868, Bd. 1, Hft. 1–4, und Bd. 2, Hft. 1–4. 8vo. München, 1867–68. THE ACADEMY.

Newcastle-upon-Tyne :—

Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne.

Natural History Transactions of Northumberland and Durham. Vol. 2. 8vo. London, 1868. THE SOCIETY.

New York :—

Lyceum of Natural History.

Annals. Vol. 8, Nos. 15–17. 8vo. New York, 1867. THE LYCEUM.

Palermo :—

R. Istituto Tecnico. Consiglio di Perfezionamento.

Giornale di Scienze Naturali ed Economiche. Vol. 4, Fasc. 1–4. 4to. Palermo, 1868. THE INSTITUTE.

	Titles.	Donors.

Academies and Societies (*continued*).

Paris :—

Muséum d'Histoire Naturelle.

Nouvelles Archives. Tome 3, Fasc. 3 & 4, et Tome 4, Fasc. 1 & 2. 4to. Paris, 1867–68. — The Museum.

Société Botanique de France.

Bulletin, Tome 7, No. 6, Tome 8, No. 1, Tome 12, Session Extraordinaire, Tome 14, Comptes Rendus, Nos. 1–3, Tome 15, Comptes Rendus, No. 1, & Revue Bibliogr. A–E, Tome 16, Rev. Bibl. A, & Tables de Tomes 12, 13 & 14. 8vo. Paris, 1860–68. — The Society.

Société Entomologique de France.

Annales. 4^{e} Série. Tome 8. 8vo. Paris, 1868. — The Society.

Perth :—

Murray Royal Institution.

Guide to the Museum of. 8vo. Edinburgh, 1868. — Dr. Lauder Lindsay, F.L.S.

Petersburg :—

Académie Imp. des Sciences.

Mémoires, 7^{e} Série, Tome 11, Nos. 9–18, & Tome 12, Nos. 1–3. 4to. St. Pétersburg, 1867–68.

Bulletin, Tome 12, Nos. 2–5, & Tome 13, Nos. 1–3. 4to. *Ibid.* 1867–68. — The Academy.

Societas Entomologica Rossica.

Horæ Societatis Entomologicæ Rossicæ. Tom. 5, No. 4, & Tom. 6, Nos. 1 & 2. 8vo. Petropoli, 1867–69. — The Society.

Hortus Botanicus Petropolitanus.

Index Seminum quæ Hortus Botanicus pro mutua commutatione offert. Accedunt Animadversiones Botanicæ nonnullæ ab E. Regel, F. ab Herder, &c. 8vo. 1869. — M. E. Regel ?

Philadelphia :

American Entomological Society.

Transactions, Vol. 1 (Nos. 1–4). 8vo. Philadelphia, 1867–68.

Proceedings, Vol. 6, No. 2. 8vo. *Ibid.*, 1866–67.

Practical Entomologist, Vol. 2, Nos. 3–12. 4to. *Ibid.*, 1866–67. — The Society.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Philadelphia (*continued*) :—

American Philosophical Society.

Proceedings, Vol. 10, No. 77, and 80. 8vo. 1867–69.
THE SOCIETY.

Plymouth :—

Plymouth Institution, and Devon and Cornwall Natural History Society.

Annual Report and Transactions, Vol. 3, Pt. 1. 8vo. Plymouth, 1868. THE SOCIETY.

Regensburg :—

Kön. Bayerische Botanische Gesellschaft.

Flora. Neue Reihe. Jahrg. 26, Nos. 13–34, und Jahrg. 27 Nos. 1–13. 8vo. Regensburg, 1868–69. PURCHASED.

St. Louis, Missouri :—

Academy of Sciences.

Transactions. Vol. 2, No. 3. 8vo. St. Louis, 1868.
THE ACADEMY.

Salem, Mass. :—

Essex Institute.

Proceedings, Vol. 5, Nos. 5 & 6. 8vo. Salem, Mass., 1868.
THE INSTITUTE.

Peabody Academy of Science.

American Naturalist: a Popular Illustrated Magazine of Natural History. Vol. 2, Nos. 1–3. 8vo. Salem, Mass., 1868. THE ESSEX INSTITUTE.

Stettin :—

Entomologischer Verein.

Entomologische Zeitung. Jahrg. 29 (Nos. 1–12). 8vo. Stettin, 1868. THE ASSOCIATION.

Switzerland :

Allgemeine Schweitzerische Gesellschaft für die gesammten Naturwissenschaften.

Neue Denkschriften (=Nouveaux Mémoires). Bd. 22. 4to. Zurich, 1867.
THE NATURAL HISTORY SOCIETY OF BASEL.

	TITLES.	DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Sydney, N. S. Wales :—

Acclimatization Society.

Annual Report (7th), at the Annual Meeting held on the 3rd of June, 1868. 8vo. Sydney, 1868.

DR. GEORGE BENNETT, F.L.S.

Toronto :—

Canadian Institute. See **Journals.**

Turin :—

R. Accademia delle Scienze.

Memorie, Serie 2, Tome 24. Scienze Fisiche e Matematiche. 4to. Torino, 1868.

Atti, Vol. 3, Disp. 1–8. 8vo. *Ibid.*, 1867–68.

THE ACADEMY.

Upsal :—

Royal Society of Sciences.

Nova Acta, Series 3, Vol. 6, Fasc. 2. 4to. Upsaliæ, 1868.

THE SOCIETY.

Victoria :—

Royal Society,

Transactions and Proceedings, Vol. 9, Pt. 1. 8vo. Melbourne, 1868. THE SOCIETY.

Vienna :—

Kais. Akademie der Wissenschaften. Math.-Naturw. Classe.

Denkschriften, Band 28. 4to. Wien, 1868.

Sitzungsberichte, Band 57, Abth. 1, Hft. 1–3, & Abth. 2, Hft. 1–3. 8vo. *Ibid.* 1868.

Anzeiger. Jahrg. 5, Nos. 15–21, 23, 24, 26, & Jahrg. 6, Nos. 1–3, 6, 7, 9, 10. 8vo. *Ibid.*, 1868–69.

THE ACADEMY.

Reise der Oesterreichischen Fregatte 'Novara.'

Zoologischer Theil, Band 1. Säugethiere, bearbeitet von Johann Zelebor. 4to. Wien, 1868. PURCHASED.

K. K. Geologische Reichsanstalt.

Jahrbuch, Band 18, Nos. 2–4. 8vo. Wien, 1868.

Verhandlungen, Jahrg. 1868, Nos. 7–18. 8vo. *Ibid.*, 1868.

THE INSTITUTE.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Vienna (*continued*) :—

K. K. Zoologisch-Botanische Gesellschaft.

Verhandlungen, Band 18. 8vo. Wien, 1868. THE SOCIETY.

Separate Publications. See **Heller,** *C.*, and **Neilreich,** *Aug.*

Washington :—

Smithsonian Institution.

Smithsonian Contributions to Knowledge, Vol. 15. 4to. Washington, 1867.

Annual Report of the Board of Regents of the S. I. for the year 1866. 8vo. *Ibid.*, 1867. THE INSTITUTION.

Würzburg :—

Physikalisch-Medicinische Gesellschaft.

Verhandlungen, Neue Folge. Band 1, Hft. 2 & 3. 8vo. Würzburg, 1868. THE SOCIETY.

Journals :—

Annales Botanices Systematicæ. See **Walpers.**

Annales des Sciences Naturelles. 5^{e} Série. Botanique, Tome 8, Nos. 5 & 6, & Tome 9, Nos. 1–6 ; Zoologie, Tome 8, Nos. 5 & 6, Tome 9, Nos. 1–6, and Tome 10, Nos. 1–6. 8vo. Paris, 1867–68. PURCHASED.

Annals and Magazine of Natural History. 4th Series, Nos. 7–18. 8vo. London, 1868-69. Dr. FRANCIS, F.L.S.

Archiv für mikroskopische Anatomie ; herausgegeben von Prof. Max Schultze. Bd. 3 & 4. 8vo. Bonn, 1867–68.

—— —— Supplement. 8vo. *Ibid.*, 1869. PURCHASED.

Archiv für Naturgeschichte ; gegründet von A. F. A. Wiegmann ; fortgesetzt von W. F. Erichsen &c. Jahrg. 32, Hft. 6, Jahrg. 33, Hft. 5, und Jahrg. 34, Hft. 1–4. 8vo. Berlin, 1866–68. PURCHASED.

Athenæum. Parts 486–497. (=Nos. 2119–70). 4to. London, 1868–69. THE PUBLISHERS.

Botanical Cabinet. See **Loddiges,** *Conrad.*

TITLES. DONORS.

Journals (*continued*) :—

Botanical Magazine. 3rd Series: continued by J. D. Hooker, M.D., F.R.S. & L.S. Nos. 283–294. 8vo. London, 1868–1869. PURCHASED.

Botanische Zeitung. Redaction H. von Mohl und A. de Bary. Jahrg. 26, Nos. 21–48, & 50–52, und Jahrg. 27, Nos. 1–21. 4to. Leipzig, 1868–69. PURCHASED.

Botanisk Tidsskrift. See **Copenhagen**. Bot. Forening.

Canadian Journal of Science, Literature, and History. New Series, Nos. 67 & 68. 8vo. Toronto, 1868–69.
THE CANADIAN INSTITUTE.

Canadian Naturalist and Geologist: with the Proceedings of the Nat. Hist. Society of Montreal. New Series, Vol. 3, Nos. 3 & 4. 8vo. Montreal, 1867–68. THE SOCIETY.

English Botany. See **Smith,** *J. E.*

Entomologist: edited by E. Newman, Esq., F.L.S. Nos. 55–62. 8vo. London, 1868–69. THE EDITOR.

Entomologist's Annual for 1869. 12mo. London, 1869.
H. T. STAINTON, Esq., F.L.S.

Entomologist's Monthly Magazine: conducted by H. G. Knaggs, M.D., R. M^{c}Lachlan, Esq., &c. Nos. 50–61. 8vo. London, 1868–69. THE EDITORS.

Flora. See ACADEMIES, &c. **Regensburg.**

Gardeners' Chronicle and Agricultural Gazette. Nos. 25–52 for 1868, and Nos. 1–24 for 1869. 4to. London.
PURCHASED.

Geological Magazine, or Monthly Journal of Geology: edited by Henry Woodward, F.G.S., Prof. John Morris, F.G.S., &c. Vol. 5, Nos. 7–12, and Vol. 6, Nos. 1–6. 8vo. London, 1868–69. THE EDITOR.

Giornale (Nuovo) Botanico Italiano. Vol. 1. No. 1. 8vo. Firenze, 1869. THE PUBLISHERS?

Ibis; a Quarterly Journal of Ornithology: edited by Alfred Newton, M.A., F.L.S., F.Z.S. &c. New Series, Nos. 15–18. 8vo. London, 1868–69. PURCHASED.

Illustration Horticole; Journal spécial des Serres et des Jardins: rédigé par Ch. Lemaire, Prof. de Botanique. Tome 15, Livr. 6–12, & Tome 17, Livr. 1–4. 8vo. Gand, 1868–69. The Publisher, M. A. VERSCHAFFELT.

Insect Hunter's Year-book for 1868. 8vo. London, 1869.
E. NEWMAN, Esq., F.L.S.

TITLES. DONORS.

Journals (*continued*) :—

Jahrbücher für wissenschaftliche Botanik: herausgegeben von Dr. N. Pringsheim. Band 6, Heft 3 & 4. 8vo. Leipzig, 1868. PURCHASED.

Journal de Conchyliologie; publié sous la direction de MM. Crosse et Fischer. 3e Serie, Tome 8, Nos. 3 & 4, and Tome 9, Nos. 1 & 2. 8vo. Paris, 1868–69. PURCHASED.

Journal of Botany, British and Foreign: edited by Berthold Seemann, Ph.D., F.L.S. &c. Nos. 67–76. 8vo. London, 1868–69. PURCHASED.

Journal of Travel and Natural History: edited by Andrew Murray, F.L.S., Vol. 1, Nos. 4–6. 8vo. London, 1868–69. THE PUBLISHERS.

Linnæa: ein Journal für die Botanik, in ihrem ganzen Umfange: herausgegeben von D. F. L. von Schlechtendal. Bd. 34, Hft. 5 & 6. 8vo. Halle, 1866.

——. Neue Folge: herausg. von Dr. Aug. Garcke. Bd. 1, Hft. 6. 8vo. *Ibid.*, 1868. PURCHASED.

Malakozoologische Blätter; als Fortsetzung der Zeitschrift für Malakozoologie; herausgegeben von Dr. Louis Pfeiffer. Band 15, Bog. 6–15, und Band 16, Bog. 1–5. 8vo. Cassel, 1868–69. PURCHASED.

Monthly Microscopical Journal; Transactions of the R. Microscopical Society, &c.: edited by Henry Lawson, M.D., &c. Vol. 1 (Nos. 1–6). 8vo. London, 1869. THE SOCIETY.

Pharmaceutical Journal and Trans. See ACADEMIES &c. **London.** Pharmaceutical Society.

Philosophical Magazine and Journal of Science. 4th Series, Nos. 240–251. 8vo. London, 1868–69.

Dr. FRANCIS, F.L.S. &c.

Popular Science Review: edited by Henry Lawson, M.D. Nos. 28–31. 8vo. London, 1868–69.

The Publisher, R. HARDWICKE, Esq., F.L.S.

Quarterly Journal of Microscopical Science: edited by E. Lankester, M.D., F.R.S. & L.S., and George Busk, Esq., F.R.S., Sec. L.S. New Series. Nos. 31 & 32. 8vo. London, 1868. THE R. MICROSCOPICAL SOCIETY.

Refugium Botanicum. See **Saunders,** *W. W.*

Zeitschrift für wissenschaftliche Zoologie: herausgegeben von C. T. von Siebold und Albert Kölliker. Band 18, Hft. 2–4, & Bd. 19, Hft. 1. 8vo. Leipzig, 1868–69.

TITLES. DONORS.

Journals (*continued*) :—

Zeitschrift für wissenschaftliche Zoologie: Namen- und Sachregister, über Band 1–15: bearbeitet von Dr. C. E. Klotz. 8vo. *Ibid.*, 1868. PURCHASED.

Zoologist: edited by Edward Newman, F.L.S. 2nd Series, Nos. 34–45. 8vo. London, 1868–69. PURCHASED.

Alfonso X., *Rey de Castilla.* Libros del Saber de Astronomia. Tomo 5, Pte. 1. Fol. Madrid, 1867.
THE R. ACADEMY OF SCIENCES, MADRID.

Bastian, *Dr. A.* Das Beständige in den Menschenrassen, und die Spielweite ihrer Veränderlichkeit. 8vo. Berlin, 1868.
C. DARWIN, Esq., F.R. & L.SS.

Bazille, *G.*, **Planchon,** *J. E.*, et **Sahut,** —. Sur une maladie de la Vigne, actuellement régnante en Provence. 4to. Paris, 1868. DR. PLANCHON, F.M.L.S.

Bentham, *George.* Flora Australiensis, Vol. 4. (Stylideæ to Pedalineæ.) 8vo. London, 1869. THE AUTHOR.

Bischoff (*G. W.*) Handbuch der Botanischen Terminologie und Systemkunde. Bd. 1–3. 4to. Nürnberg, 1833–44.
PURCHASED.

Boccardo, *Girolamo.* Fisica del Globo. 8vo. Genova, 1868.
C. DARWIN, Esq., F.R. & L.SS.

Brigham, *W. T.* Notes on the Volcanos of the Hawaiian Islands; with a History of their various eruptions. 4to. Boston, 1868. C. DARWIN, Esq., F.R. & L.SS.

Brongniart, *Ad.* Considérations sur la Flore de la Nouvelle Calédonie. (Comptes Rendus de l'Acad. des Sc., Tome 60.) 4to. 1865.

——. Notice sur un fruit des Lycopodiacées fossiles. (*Ibid.*, Tome 67.) 4to. 1868.

——. Note sur un nouveau genre de la famille des Broméliacées. (Ann. Sc. Nat., 5^{e} Série, Tome 1.) 8vo.

——. Rapport sur les progrès de la Botanique Phytographique. 8vo. Paris, 1868. THE AUTHOR.

Brongniart, *Ad.*, et **Gris,** *Arthur.* Description de quelques plantes remarquables de la Nouvelle Calédonie. (Nouv. Archives du Muséum, Tome 4.) M. BRONGNIART.

TITLES. DONORS.

Brown, *Robert.* Synopsis of the Birds of Vancouver's Island. (Ibis, 1868.) 8vo.

——. Florula Discoana: Contributions to the Phyto-geography of Greenland. (Trans. Bot. Soc. Ed., Vol. 9.) 8vo. Edinburgh, 1868.

——. Observations on the medicinal and economic value of the Oulachan (Osmerus pacificus, Rich.), a fish found on the N.W. Coast of America. (Pharmaceut. Journ., June 1868.) 8vo.

——. Monograph of the Coniferous genus Thuja, L., and of the North-American species of the genus Libocedrus, Endl. (Trans. Bot. Soc. Ed., vol. 9.) 8vo. (1868.)

THE AUTHOR.

Caruana, *A. A.* Enumeratio ordinata Molluscorum Gaulo-Melitensium, &c. 8vo. Malta, 1867. THE AUTHOR.

Carus, *J. V.*, und **Gerstaecker,** *C. E. A.* Handbuch der Zoologie. Bd. 1, Hälfte 1. 8vo. Leipzig, 1868.

PURCHASED.

Claparède, *E. R.*, et **Panceri,** *Paolo.* Nota sopra un Alciopide parassito della Cydippe densa, Forsk. 4to. Milano, 1867. C. DARWIN, Esq., F.R.S. &c.

Cleghorn, *Hugh.* Biographical Notice of the late Dr. Walker Arnott. (From Trans. Bot. Soc. Ed., vol. 9.) 8vo. Edinburgh, 1868. THE AUTHOR.

Cox, *James C.* Monograph of Australian Land Shells. 8vo. Sydney, 1868. THE AUTHOR.

Da Costa, *Pereira.* Molluscos Fosseis. Gasteropodes Terciarios de Portugal. Cadenio 1 & 2. (Commissão Geol. de Portugal.) 4to. Lisboa, 1866–67.

C. DARWIN, Esq., F.R. & L.SS.

De Candolle, *Alphonse,* Ed. Prodromus Systematis Naturalis Regni Vegetabilis. Pars 16, Sectio posterior, fasc. 2. 8vo. Parisiis, 1868. PURCHASED.

Delgardo, *J. F. N.* Da existencia do Homem no nosso solo em tempos mui remotos, provada pela estudo das Cavarnas. Opusc. 1. Noticia ácerca das Grutas da Cesareda. 4to. Lisboa, 1867. C. DARWIN, Esq., F.R. & L.SS.

Duchartre, *P.* Rapport sur les progrès de la Botanique physiologique. 8vo. Paris, 1868. THE AUTHOR.

Flower, *T. B.* Flora of Wiltshire. No. 11. 8vo. (Devizes.)

THE AUTHOR.

TITLES. DONORS.

Folin, *Le Marquis L. de.* Le genre Meioceras. (Ann. Soc. Linn. Maine-et-Loire, Tome 11.) 8vo. Angers, 1869.
THE AUTHOR.

[**Garner,** *R.*] Holiday Excursions of a Naturalist; forming a Guide-book to the Natural History of the Inland and Littoral. 8vo. London, 1867. THE AUTHOR.

Günther, *A. C. L.*, Ed. Record of Zoological Literature, 1867. Vol. 4. 8vo. London, 1868. PURCHASED.

Guillard, *Achille.* Des caractères distinctifs des familles à puiser dans l'organisme externe. (Adansonia, Vol. 8.) 8vo. (Paris.) THE AUTHOR.

Guppy, *R. J. L.* Further additions to the Catalogue of the Land and Freshwater Mollusca of Trinidad. (Proc. Scient. Assoc. of Trinidad, Dec. 1868.) 8vo. THE AUTHOR.

Hardy, —. Note sur la culture du Quinquina. 8vo. (Paris,) 1868. THE AUTHOR?

Heller, *Camill.* Die Zoophyten und Echinodermen des Adriatischen Meeres. 8vo. Wien, 1868.
THE ZOOL. BOT. SOCIETY, VIENNA.

Heyer, *Gustav.* Supplemente zu der allgemeinen Forst- und Jagd-Zeitung. Band 7, Hft. 1 (Geographische Verbreitung unserer wichtigsten Waldbäume.) 4to. Frankfurt a. M., 1868. Herr HOFFMANN?

Hoffmann, *Herm.* Pflanzenarealstudien in den Mittelrheingegenden. (Bericht d. Oberhess. Ges. für Natur- & Heilkunde?) 8vo. THE AUTHOR?

Hofmeister, *Wilh.* Neue Beiträge zur Kenntniss der Embryobildung der Phanerogamen. Heft 1. (Abh. d. Kön. Sächs. Ges. der Wissensch., Bd. 6.) 8vo. Leipzig, 1859.
F. CURREY, Esq., Sec. L.S.

Hofmeister, *Wilh.*, **Bary,** *A. de, &c.*, Ed. Handbuch der Physiologischen Botanik. Band 1, Abth. 2. 8vo. Leipzig, 1868. PURCHASED.

Hogg, *Jabez.* The Lingual Membrane in Mollusks, and its value in classification. (Microsc. Journ., 1868.) 8vo. London. THE AUTHOR.

Hooker, *J. D.* Himalayan Journals: or Notes of a Naturalist in Bengal, the Sikkim and Nepal Himalayas, the Khasia Mountains, &c. 2 vols. 8vo. London, 1854. PURCHASED.

TITLES. DONORS.

Hooker, *J. D.* Handbook of the New-Zealand Flora. 8vo. London, 1867. PURCHASED.

Howard, *John Eliot.* Quinology of the East-Indian Plantations. Fol. London, 1869. THE AUTHOR.

Jenyns, *Rev. Leonard.* Observations in Natural History; with an introduction on Habits of Observing, &c.; also, a Calendar of Periodic Phenomena in Natural History. 12mo. London, 1846.

——. Notes on the Summer of 1868; particularly as regards the Temperature as observed in Bath, &c. 8vo. Bath, 1868. THE AUTHOR.

Koch, *Karl.* Dendrologie. Bäume, Sträucher, und Halbsträucher welche in Mittel- und Nord-Europa im Freien kultivirt werden. Theil 1. 8vo. Erlangen, 1869. THE AUTHOR.

Lartet, *Edouard*, & **Christy,** *Henry.* Reliquiæ Aquitanicæ, edited by T. R. Jones. Parts 6–9. 4to. London, 1868–69. THE EXORS. of the late H. CHRISTY, Esq.

Leeds, *H.* See **India.** Forest Reports.

Loddiges, *Conrad.* Botanical Cabinet; consisting of coloured delineations of plants from all countries; the plates by George Cooke. 20 vols. 12mo. London, 1817–33. PURCHASED.

Martins, *Ch.* Les Jardins Botaniques de l'Angleterre comparés à ceux de la France. 8vo. Paris, 1868. THE AUTHOR?

Martius, *C. F. Ph. von.* Flora Brasiliensis. Fasc. 44–46. Fol. Lipsiæ, 1868. PURCHASED.

Miquel, *F. A. G.*, Ed. Annales Musei Botanici Lugduno-Batavi. Tom. 3, fasc. 6–10, & Tom. 4, fasc. 1–5. Fol. Amstelodami, &c., 1867–69. THE UNIVERSITY OF LEYDEN?

Miquel, *F. A. W.* Nouveaux Matériaux pour servir à la connaissance des Cycadées. (Archives Néerland., Tome 3). 8vo. 1868. C. DARWIN, Esq., F.R. & L.SS.

Moggridge, *J. T.* Contributions to the Flora of Mentone, pts. 1 to 3. 8vo. London, 1866–68. THE AUTHOR.

Müller, *Car.* *v.* **Walpers.**

Müller, *Ferd.* Fragmenta Phytographiæ Australiæ, vol. 5. 8vo. Melbourne, 1865–66. C. DARWIN, Esq., F.R.S. &c.

Neilreich, *Aug.* Vegetationsverhältnisse von Croaten. 8vo. Wien, 1868. THE ZOOL. BOT. SOCIETY, VIENNA.

TITLES. DONORS.

Newman, *Edward.* History of British Moths. Nos. 19–30. 8vo. London, 1868–69. THE AUTHOR.

Oliver, *Daniel.* Flora of Tropical Africa, vol. 1. 8vo. London, 1868. THE FIRST COMMISSIONER OF H. M. WORKS.

Peters, *W. C. H.* Naturwissenschaftliche Reise nach Mossambique, in den J. 1842–48 ausgeführt. Zoologie.—4. Flussfische. Fol. Berlin, 1868.
Dr. J. E. GRAY, F.R. & L.SS.

Planchon, *J. E.* Nouvelles observations sur le Puceron de la Vigne. (Phylloxera vastatrix). 8vo. Montpellier, 1868.
THE AUTHOR.

Planchon, *J. E.*, & **Saintpierre,** —. Premières expériences sur la destruction du Puceron de la Vigne. 8vo. Montpellier, 1868. Dr. PLANCHON, F.M.L.S.

Pollender, *Dr. Aloys.* Wem gebührt die Priorität in der Anatomie der Pflanzen, dem Grew oder dem Malpighi? 4to. Bonn, 1868.

——. Ueber das Entstehen und die Bildung der kreisrunden Oeffnungen in der äusseren Haut des Blütenstaubes, &c. 4to. *Ibid.* 1867.

——. Neue Untersuchungen über das Entstehen, die Entwickelung, den Bau, und das chemische Verhalten des Blütenstaubes. 4to. Bonn, 1868. THE AUTHOR.

Pringsheim, *N.*, Jahrbücher. See **Journals.**

Quetelet, *A.* Annales Météorologiques de l'Observatoire Royal de Bruxelles. 2ᵉ Année. 4to. Bruxelles, 1868.
M. QUETELET.

Rabenhorst, *Ludov.* Flora Europæa Algarum aquæ dulcis et submarinæ. (Sect. 1–3.) 8vo. Lipsiæ, 1864–8. PURCHASED.

Read, *F.* See **India.** Forest Reports.

Reeve, *Lovell.* Conchologia Iconica. Pts. 272–279. 4to. London, 1868–69. PURCHASED.

Ribeiro, *Carlos.* Descripção do Solo Quaternario das Bacias Hydrographicas do Tejo e Sado. Caderno 1. 4to. Lisboa, 1866. C. DARWIN, Esq., F.R. & L.SS.

Saunders, *W. Wilson*, Ed. Refugium Botanicum, Parts 2 and 3. 8vo. London, 1868–69. THE EDITOR.

Saussure, *H. de.* Description d'une Série d'Hyménoptères nouveaux de la tribu des Scoliens. 8vo. Stettin, 1859.

——. Sur divers Vespides Asiatiques et Africains du Musée de Leyde. 8vo.

TITLES. DONORS.

Saussure, *H. de.* Phasmidarum novarum species nonnullæ. (Revue et Mag. de Zool.) 8vo. Paris.

—— Note sur quelques Mammifères du Mexique. (*Ibid.*, No. 1, 1860.) 8vo.

—— Orthopterum species novæ aliquot. (*Ibid.*, 1868.) 8vo.

—— Mélanges Hyménoptérologiques. Fasc. 1, *Appendice*, et fasc. 2. 4to. Genève et Bâle, 1854–63.

—— Mélanges Orthoptérologiques. Fasc. 1. 4to. *Ibid.*, 1863.

SIR JOHN LUBBOCK, Bart., F.R. & L.SS.

Schimper, *W. P.* Traité de Paléontologie Végétale : ou la Flore du Monde Primitif, &c. Tome 1. 8vo. Paris, 1869 (avec Atlas, 4to). THE AUTHOR.

Schomburgk, *R.* Report on the Botanic Garden (Adelaide), for the year 1868. Fcap. fol. C. A. WILSON, Esq., F.L.S.

Schultze, *Max.* Archiv für mikroskopische Anatomie. See **Journals.**

Schweinfurth, *Dr. G.* Pflanzengeographische Skizze des gesammten Nil-Gebiets, und der Uferländer des Rothen Meeres. (Petermann's Geogr^e^ Mittheil^n^, 1868, Hft. 4.) 4to.

Dr. PETERMANN.

Scott, *John.* List of the Higher Cryptogams in the Royal Botanic Gardens, Calcutta. (Journ. Agric. & Hort. Soc. India. N. Ser. Vol. 1, Pt. 2.) 8vo. (1868.)

T. ANDERSON, M.D., F.L.S.

Shortt, *J.* Account of the Tribes on the Neilgherries ; and a Geographical and Statistical Memoir of the Neilgherry Mts., by the late Col. Ouchterlony. 8vo. Madras, 1868.

THE AUTHOR.

Siebold, *C. T.* See **Journals.** Zeitsch. für wissensch. Zoologie.

Smith, *J. E.*, & **Sowerby,** *James.* English Botany. 3rd Edition. By J. T. B. Syme, Mrs. Lankester, &c. Nos. 63–70. 8vo. London, 1868–69.

THE PUBLISHER, R. HARDWICKE, Esq., F.L.S.

Smitt, *F. A.* Kritisk Förteckning öfver Skandinaviens Hafs-Bryozoer. Nos. 1–4. (Öfversigt af K. Vet.-Akad. Förhandl., 1865–67.) 8vo. Stockholm (1868).

—— Bryozoa Marina in regionibus Arcticis et Borealibus viventia. (*Ibid.*, 1867.) 8vo. Holmiæ, 1868.

Sir CHARLES LYELL, Bart., F.R. & L.SS.

TITLES. DONORS.

Soubeiran, *J. L.* Rapport sur la culture de Cépages de Tokay en France. (Bull. Soc. Imp. d'Acclimat., Juin 1868.) 8vo. THE AUTHOR.

Soubeiran, *J. L.* & **Delondre,** *Aug.* De l'introduction et de l'acclimatation des Cinchonas dans les Indes Néerlandaises et Britanniques. 8vo. Paris, 1868.

—— ——. La Matière Médicale à l'Exposition de 1867. 8vo. Paris, 1868. Dr. SOUBEIRAN.

Storer, *D. H.* History of the Fishes of Massachusetts. (Reprinted from the Mem. Amer. Acad.) 4to. Cambridge & Boston, 1867. THE AUTHOR.

Thompson, *R.* See **India.** Forest Reports.

Wagner, *Moritz.* Die Darwinsche Theorie, und das Migrationsgesetz der Organismen. 8vo. Leipzig, 1868.
C. DARWIN, Esq., F.R.S. &c.

Walpers. Annales Botanices Systematicæ, auct. Dr. Car. Müller. Tom. 7, fasc. 1–3. 8vo. Lipsiæ, 1868–69.
PURCHASED.

Waring, *E. J.* Pharmacopœia of India. 8vo. London, 1868.
THE PHARMACOPŒIA OF INDIA COMMITTEE.

Wiegmann, *A. F. A.* Archiv für Naturgeschichte. See **Journals.**

Woolls, *William.* Contribution to the Flora of Australia. 8vo. Sydney, 1867. THE AUTHOR.

Yersin, *A.* Note sur le Pachytilus migratorius, Fisch. (Archives d. Sc. de la Bibl. Univ., 1858.) 8vo.
Sir JOHN LUBBOCK, Bart.

Zanardini, *G.* Iconographia Phycologica Mediterraneo-Asiatica. Vol. 2, fascic. 4. 4to. Venezia, 1868.
PURCHASED.

ANONYMOUS.

Index Seminum Horti Monspeliensis. 4to. 1868.
M. MARTINS ?

Principles of Organic Life. 8vo. London, 1868.
THE PUBLISHER, R. HARDWICKE, Esq., F.L.S.

PROCEEDINGS

OF THE

LINNEAN SOCIETY OF LONDON.

(SESSION 1869-70.)

November 4th, 1869.

George Bentham, Esq., President, in the Chair.

Charles Lambert Esq., was elected a Fellow.

The following Report, on the Additions to the Library since the last Report (Proceedings, 1868–69, p. xlv), was laid before the Meeting :—

The publications of Scientific Bodies received since the date of the last Report (May 6, 1869), have been the following :—

(Those marked with the asterisk (*) contain no paper on recent Zoology or Botany.)

DENMARK :—

Royal Danish Society of Sciences, Copenhagen. Transactions (Skrifter), Ser. 5, viii. parts 1 and 2. Proceedings (Oversigt over Forhandlinger), 1867, n. 6 and 7 ; 1868, n. 1 to 4 ; 1869, n. 1.

Botanical Society of Copenhagen. Botanical Journal (Tidsskrift), ii. parts 1 to 4, iii. part 1. Purchased.

RUSSIA :—

Imperial Academy of Sciences, St. Petersburg. Memoirs, Ser. 7, xii. n. 4, 5, xiii. n. 1 to 7; Bulletin, xiii. n. 4, 5.

Entomological Society of Russia, St. Petersburg. Journal (Horæ), vi. part 2.

Imperial Society of Naturalists, Moscow. Bulletin, 1868 ii. n. 3.

GERMANY :—

Royal Academy of Sciences, Berlin. *Transactions (Abhandlungen), 1868; Proceedings (Monatsberichte), 1869, March to June.

Imperial Academy of Sciences, Vienna. Proceedings (Sitzungsberichte): *Physical Division, lvii. n. 4, 5, lviii. n. 1; Natural-History Division, lvii. n. 4, 5. *Minutes of Proceedings (Sitzungsberichte), 1869, n. 12 to 19.

Imperial and Royal Geological Institute of Vienna. *Journal (Jahrbuch), xix. n. 1; *Proceedings (Verhandlungen), 1869, n. 1.

Royal Bavarian Acadamy of Sciences, Munich. Transactions of the Mathematico-Physical Class (Abhandlungen), x. part 2. *Proceedings (Sitzungsberichte), 1869, i. n. 1 to 3. C. F. Meissner's Obituary Notice of C. F. Ph. v. Martius. A. Vogel's Address on the Development of Agricultural Chemistry.

Natural-History Association of Brünn. Transactions (Verhandlungen), vi. (1867).

Upper-Hessian Society of Natural History and Medical Science, Giessen. Report, xiii. 1869.

Natural-History Association of Rhenish Prussia, Bonn. Transactions (Verhandlungen), xxv.

ITALY :—

Royal Institute of Venice. Memoirs, xiv. n. 1 and 2; Proceedings (Atti), xii. n. 10, xiii. n. 1 to 10, xiv. n. 1 to 5.

Royal Technical Institute of Palermo. Journal of Natural and Economical Sciences (Giornale), iv. n. 4, v. n. 1, 2.

SWITZERLAND :—

Society of Physics and Natural History, Geneva. Memoirs, xx.

"Société Vaudoise" of Natural Sciences, Lausanne. Bulletin, x. n. 61.

Natural-History Society of Zurich. Quarterly Journal (Vierteljahrsschrift), iii. 1858, 2 parts, v. 1860, 4 parts (to complete our set), xii. 1867, xiii. 1868.

Naturalists' Society of Basle. Transactions (Verhandlungen), v. n. 2.

FRANCE :—

Botanical Society of France, Paris. Bulletin, xv, Proceedings (Comptes rendus), n. 2, and, Extraordinary Meeting; xvi, Proceedings, n. 1 to 3; *Bibliographical Review, A to C.

Imperial Society of Agriculture, Lyons. Annals of Physical and Natural Sciences, Ser. 3, xi.

Society of Physical and Natural Sciences, Bordeaux. *Minutes of Proceedings (Procès-verbaux), March to May, 1869.

INDIA :—

Asiatic Society of Bengal. Journal, New Series: *History, xxxix. n. 2; Physical Science, xxxviii. n. 2, 3. *Proceedings, 1869, n. 2 to 7.

East-India Association. *Journal, iii. n. 2.

Royal Natural-History Society for Netherlands-India, Batavia. Journal of Natural Science for Netherlands-India (Tijdschrift), xxx.

AUSTRALIA :—

Adelaide Philosophical Society. Report and Transactions for 1868.

SOUTH AMERICA :—

Society of Physical and Natural Science, Caraccas. Vargasia, n. 5.

NORTH AMERICA :—

Smithsonian Institution, Washington. Annual Report for 1867.

National Academy of Sciences, Washington. *Report of Operations for 1866 and 1867.

American Entomological Society, Washington. Transactions, ii. n. 1, 2.

American Philosophical Society, Philadelphia. Transactions, New Ser. xiii. n. 3; *Proceedings, x. n. 78, 79, xi. n. 81.

Boston Society of Natural History. Occasional Papers, i.; Memoirs, i. n. 4; Proceedings, xii. to p. 272.

Museum of Comparative Zoology, Boston. Report for 1868, Bulletin n. 7.

American Academy of Arts and Sciences, Boston. Proceedings, vii. conclusion.

Essex Institute, Salem. Proceedings, v. n. 7, 8.

Peabody Academy of Sciences, Salem. Memoirs, i. n. 1; The American Naturalist, ii.

Lyceum of Natural History, New York. Annals, ix. n. 1 to 4.

Portland Society of Natural History. Proceedings, i. n. 1, 2.

British Dominion :—

Canadian Institute, Toronto. *Canadian Journal of Science, Literature, and History, xii. n. 2, 3.

Natural-History Society of Montreal. The Canadian Naturalist, New Ser. iii. n. 5, 6.

Nova-Scotian Institute of Natural Science, Halifax. Proceedings and Transactions, ii. n. 2.

Britain :—

Royal Society. Proceedings, xvii., xviii. n. 111 to 114.

Society of Arts. *Weekly Journal.

Entomological Society. Transactions, 1869, n. 2, 3, 4, and Ser. 3, iii. part 7.

Geological Society. *Quarterly Journal, xxv. n. 2, 3.

Linnean Society. Journal, Zoology, x. n. 46; Botany, xi. n. 50, 51, xii.

Pharmaceutical Society. *Journal and Transactions, Ser. 2, xi. 1 to 4.

Quekett Microscopical Club. Journal, i. n. 7, 8.

Ray Society. Masters, Vegetable Teratology.

Royal Agricultural Society. *Journal, Ser. 2, v. n. 2.

Royal Asiatic Society. *Journal, iv. n. 1.

Royal Geographical Society. *Journal, xxxviii; *Proceedings, xiii. n. 3, 4.

Royal Institution. Proceedings, v. n. 5, 6; *Report, 1869.

Royal Medical and Chirurgical Society. *Proceedings, vi. n. 3, 4.

Royal Microscopical Society. Monthly Microscopical Journal and Transactions, 1869, i. ii., May to October.

Zoological Society. Transactions, vi. n. 8. Proceedings, 1868 iii., 1869 i.

British Association for the Advancement of Science. Report of the Norwich Meeting, 1868.

Royal Dublin Society. Journal, v. n. 38.

Royal Geological Society of Ireland. *Journal, ii. n. 1.

Cambridge Philosophical Society. *Transactions, ii. n. 2. *Proceedings, 1868–9, n. 3 to 6.

Northumberland and Durham Natural-History Transactions, iii. n. 1.

Literary and Philosophical Society of Manchester. Memoirs, Ser. 3, iii.

Warwickshire Natural-History and Archæological Society. *Annual Report.

Cornwall Polytechnic Society. *Annual Report, 1868.

Bath Natural-History and Antiquarian Field Club. Proceedings, 1867–69.

The Scientific Periodicals taken in by, or presented to, the Society, the current numbers of which are not specially enumerated in each successive Library Report, although their biological contents are included in the Analyses of Papers, are the following:—

General or Mixed Natural History:—

Annals and Magazine of Natural History, monthly. Presented by Dr. Francis.

Wiegmann's Archiv für Naturgeschichte, quarterly, or nearly so. Purchased.

Popular Science Review, quarterly. Presented by the Publisher.

Monthly Microscopical Journal. Presented by the Microscopical Society.

Zoology:—

Siebold and Kölliker's Zeitschrift für wissenschaftliche Zoologie. Purchased.

Annales des Sciences Naturelles, Zoologie, monthly, or nearly so. Purchased.

Zoologist, monthly. Purchased.

Ibis, quarterly. Purchased.

Entomologist's Monthly Magazine. Presented by the Editors.

Entomologist, monthly. Presented by the Editor.
Journal de Conchyliologie, quarterly. Purchased.
Malacozoologische Blätter. Purchased.

Botany :—

Pringsheim's Jahrbücher für wissenschaftliche Botanik, quarterly. Purchased.

Annales des Sciences Naturelles, Botanique, monthly, or nearly so. Purchased.

Linnæa, quarterly, or nearly so. Purchased.
Seemann, Journal of Botany, monthly. Purchased.
Botanische Zeitung, weekly. Purchased.
Flora, weekly. Purchased.
Botanical Magazine, monthly. Purchased.

Horticulture :—

Illustration Horticole, monthly. Presented by the Publisher.
Gardeners' Chronicle, weekly. Purchased.

Miscellaneous :—

London, Edinbugh, and Dublin Philosophical Magazine and Journal of Science, monthly. Presented by Dr. Francis.

Scientific Review. Presented by the Publisher.

Geological Magazine, monthly. Presented by the Editors.

Journal of the Society of Arts, weekly. Presented by the Society.

Pharmaceutical Society's Journal and Transactions, monthly. Presented by the Society.

Athenæum, weekly. Presented by the Publishers.

The Biological papers contained in the above Transactions, Proceedings, and Journals, and the separate works added to the Library since the last Report, are as follows :—

(This analytical enumeration is continued according to the plan adopted last year. The contents of all the publications received are analyzed, with the sole exception of the few journals confined either to Ornithology, Entomology, or Conchyliology, which, each time they are received, are entered only under their respective heads, without any detailed recapitulation of their contents. The short Memoranda on individual animals and plants observed in particular

districts, contained in the Zoologist, in some of the foreign botanical periodicals, in reports of field clubs, and in accounts of zoological or botanical excursions, &c., are also passed over as being generally of purely local interest, and at the same time so numerous that they would have enormously extended these Reports without any corresponding advantage. Purely Medical, Agricultural, and Horticultural Papers are omitted, notwithstanding any remote connexion with Biology. Anatomical Papers are only inserted when they relate more or less to Animals or Mammalia generally and are not strictly confined to human anatomy. A heading has now been added for the Palæontological papers dispersed in the publications analyzed, in which, however, are not included those contained in Transactions and Journals exclusively devoted to Geology.)

MAMMALIA AND GENERAL ZOOLOGY:—

F. L. W. Bischoff. On the convolutions of the brain of Man, with reference to their development in the fœtus and to their arrangement in Monkeys, 7 plates. Trans. R. Acad. Munich, x.

W. T. Blanford. A new Hare from Abyssinia. Ann. Nat. Hist. Ser. 4, iv.

E. Blyth. Notice of two overlooked species of Antelope, woodcuts.—On the hybrid between the Chamois and the Domestic Goat. Proc. Zool. Soc. 1869, i.

E. Brandt. On the biting-apparatus of *Sorex*, 6 plates. Bull. Soc. Imp. Nat. Mosc. 1868, ii.

R. Brown. On the Pinnipedia of the Spitzberg and Greenland seas.—On the Cetacea of Davis's Straits and Baffin's Bay. Proc. Zool. Soc. 1868, iii.

N. Bubnoff. Various anatomical papers, chiefly human, but relating also in some measure to Mammalia, plates. Proc. Imp. Acad. Vienna, Nat. Hist. lvii.

A. Campbell. On the mode of capture of Elephants in Assam. Proc. Zool. Soc. 1869, i.

J. G. Cooper. The Fauna of Montana territory. Amer. Naturalist, ii.

L. J. Fitzinger. Critical researches on the natural family Sorices. Proc. Imp. Acad. Vienna, Nat. Hist. lvii.

W. H. Flower. On the value of the characters of the base of the cranium in the classification of Carnivora, woodcuts and diagram. Proc. Zool. Soc. 1869, i.

J. C. Galton. The myology of *Cyclothurus didactylus*, 1 plate. Ann. Nat. Hist. Ser. 4, iv.; also a separate copy presented by the author.

J. R. Gilpin. On the Mammalia of Nova Scotia. Trans. Nov. Scot. Inst. ii.

J. E. Gray. Notes on the fœtus of an Elephant, and of a Hippopotamus in the British Museum, woodcut.—On the skulls of Dogs, Wolves, and Foxes in the British Museum, woodcuts.—On the bottle-nosed Whales, woodcut. Proc. Zool. Soc. 1868, iii.

——. Additional notes on Sea-bears (Otariadæ).—On the development and change in the form of the horn of the Gnu (*Connochetes Gnu*).—Notes on Seals (Phocidæ) and the changes in the form of their lower jaw during growth. Ann. Nat. Hist. Ser. 4, iv.

A. H. Green. On the natural history and hunting of the Beaver, with notes by R. Brown. Journ. Linn. Soc. Zool. x.

W. J. Hays. The prong-horned Antelope, 1 plate. Amer. Naturalist, ii.

R. Hensel. Report on the contributions to the natural history of Mammalia for 1866. Wiegm. Archiv, xxxiii.

J. W. Hulke. On the blood-vessel system of the retina of the Hedgehog. Proc. R. Soc. xvii. Monthly Microsc. Journ. 1869.

— v. Krauss. On *Cholœpus didactylus*, Linn. Wiegm. Archiv, xxxv.

A. Macalister. On the myology of *Bradypus tridactylus*. Ann. Nat. Hist. Ser. 4, iv.

R. Mantegazza. Experimental researches on animal-grafting and the artificial production of cellules, 6 plates. Presented by Mr. Darwin.

J. Murie. On Eared Seals from the Falkland islands, 1 plate and woodcuts. Proc. Zool. Soc. 1869, i.

A. Murray. On the alleged occurrence of the Rhinoceros in Borneo. Proc. Zool. Soc. 1868, iii.

A. S. Packard, jun. The hairy Mammoth, 1 plate. Amer. Naturalist, ii.

W. C. H. Peters. New and little-known Bats, especially from the Paris Museum. Proc. R. Acad. Berlin, 1869.

R. A. Philippi. On some animals from Mendoza, 1 plate. Wiegm. Archiv, xxxv.

C. B. Radcliffe. Researches on animal Electricity. Proc. R. Soc. xvii.

L. Sabaneef. Materials for the fauna of the government of Jaroslav (continued). Bull. Soc. Imp. Nat. Mosc. 1868, ii.

H. de Saussure. On some Mexican Mammifera, 4 plates. (Separate copy from Rev. et Mag. Zool.) Presented by Sir John Lubbock.

P. L. Sclater. On the breeding of Mammals in the gardens of the Zoological Society during the past twenty years. Proc. Zool. Soc. 1868, iii.

S. J. Smith. The geographical distribution of Animals. Amer. Naturalist, ii.

J. Steenstrup. The character of the indigenous Icelandic terrestrial Mammalian fauna (from the Vidensk. Meddel. Nat. Hist. Soc. Copenhagen). Ann. Nat. Hist. Ser. 4, iii.

L. Stieda. Studies on the central nervous system of Birds and Mammals, 3 plates. Zeitschr. wiss. Zool. xix.

A. v. Winiwarter. On the anatomy of the ovarium in Mammalia, 1 plate. Proc. Imp. Acad. Vienna, Nat. Hist. lvii.

Ornithology :—

The Ibis, v. n. 19 (July).

J. A. Allen. Notes on Birds observed in western Iowa. Mem. Bost. Soc. Nat. Hist. i.

A. D. Bartlett. Remarks on the habits of Hornbills. Proc. Zool. Soc. 1869, i.

W. T. Blanford. Ornithological notes, chiefly on Birds of Central, Western, and Southern India. Journ. Asiat. Soc. Bengal, xxxviii.

——. Five new Birds from Abyssinia. Ann. Nat. Hist. Ser. 4, iv.

H. Burmeister. Contributions to the Ornithology of the Argentine Republic and adjacent islands. Proc. Zool. Soc. 1868, iii.

J. G. Cooper. The fauna of Montana territory. Amer. Naturalist, ii.

E. D. Cope. The Birds of Palestine and Panama compared. Amer. Naturalist, ii.

E. Coues. Synopsis of the Birds of South Carolina. Proc. Bost. Soc. Nat. Hist. xii.

——. Catalogue of the North-American Birds in the museum of the Essex Institute. Proc. Essex Inst. v.

O. Finsch. On a very rare Parrot from the Solomon Islands, 1 plate. Proc. Zool. Soc. 1869, i.

F. A. Forel. On a false albinism of three young Swans. Bull. Soc. Vaud. Sc. Nat. x.

J. Gould. Five new Birds from Queensland.—*Ceryle Sharpii*, a new Kingfisher from the Gaboon. Ann. Nat. Hist. Ser. 4, iv.

D. Gunn. Notes of an egging expedition to Shoal Lake west of Lake Winnipeg. Rep. Smiths. Instit. 1867.

G. Hartlaub. Report on the contributions to the Natural History of Birds during the years 1866 and 1867. Wiegm. Archiv, xxxiii. xxxiv.

F. W. Hutton. On the mechanical principles involved in the sailing flight of the Albatros. Phil. Mag. xxxviii.

G. N. Lawrence. Catalogue of the Birds found in Costarica. Ann. Lyc. Nat. Hist. N. York, ix.

H. Lawson. The anatomical relation of the ciliary muscle in Birds, $\frac{1}{2}$ plate. Monthly Microsc. Journ. ii.

L. Lombardini. On irregular organic forms in Birds and Batrachia, 8vo, 2 plates. Presented by Mr. Darwin.

J. Murie. On the presence and function of the gular pouch in *Otis Kori* and *O. australis*, 1 plate. Proc. Zool. Soc. 1868, iii.

——. On the sublingual aperture and sphincter of the gular pouch in *Otis tarda*, woodcut. Proc. Zool. Soc. 1869, i.

W. v. Nathusius. Additions to his paper on the coatings which cover the yolk of Birds' eggs (Proc. 1868–9, p. viii), 3 plates. Zeitschr. wiss. Zool. xix.

W. K. Parker. On the osteology of the Kagu (*Rhinochetus*), 2 plates. Trans. Zool. Soc. vi.

G. du Plessis and J. Combe. On the Birds of the district of Orbe. Bull. Soc. Vaud. Sc. Nat. x.

H. Reeks. Notes on Newfoundland Birds. Zoologist, 1869.

F. Salvadori. A new species of *Leucosticte*, 1 plate. Proc. Zool. Soc. 1868, iii.

P. L. Sclater. New or little-known species of Formicarians, 1 plate. Proc. Zool. Soc. 1868, iii.

——. On a collection of Birds from the Solomon Islands, 2 plates. —On the Birds of the vicinity of Lima, Peru, 1 plate. Proc. Zool. Soc. 1869, i.

P. L. Sclater and O. Salvin. Synopsis of American Rallidæ, 1 plate.—On Peruvian Birds collected by Mr. Whitely (continued).—On Venezuelan Birds collected by Mr. A. Goering (continued). Proc. Zool. Soc. 1868, iii.

—— ——. Notes on the species of *Asturina*.—On Peruvian Birds collected by Mr. Whitely (continued), 1 plate.—On Argentine Birds. Proc. Zool. Soc. 1869, i.

R. B. Sharpe. On the genus *Ceyx*. Proc. Zool. Soc. 1868, iii.

——. On the genus *Chætops*, 1 plate. Proc. Zool. Soc. 1869, i.

L. Stieda. Studies on the central nervous system of Birds and Mammals, 3 plates. Zeitschr. wiss. Zool. xix.

F. Sumichrast. The geographical distribution of the native Birds of the Department of Vera Cruz. Mem. Bost. Soc. Nat. Hist. i.

T. M. Trippe. The Warbler. Amer. Naturalist, ii.

Ichthyology :—

W. Andrews. On the Ichthyology of the west coast of Ireland. Journ. R. Dubl. Soc. v.

E. D. Cope. Synopsis of the Cyprinidæ of Pennsylvania, with a supplement on new American and African fishes. Trans. Amer. Phil. Soc. n. ser. xiii.

F. Cortese. On an anomaly in the optical nerves of Fishes, 3 plates. Mem. R. Venet. Inst. xiv.

F. Day. Observations on Indian Fishes. Proc. Zool. Soc. 1868, iii.

J. B. Gilpin. On the food fishes of Nova Scotia. Trans. Nov.-Scot. Inst. Nat. Sc. ii.

A. Günther. Two new Fishes discovered by Marquis Doria. Ann. Nat. Hist. Ser. 4, iii.

J. D. Macdonald. On *Gonostomyxus*, a new genus of Mugilidæ from the Feejee group, 1 plate. Proc. Zool. Soc. 1869, i.

Th. v. Siebold. On the acclimatization of Salmonidæ in Australia and New Zealand, with an appendix on the means of transport, 1 plate. Zeitschr. wiss. Zool. xix.

J. Steindachner. Icthyological report on a journey into Spain and Portugal (continued), 6 plates.—Ichthyological notes (continued), 5 plates. Proc. Imp. Acad. Sc. Vienna, Nat. Hist. lvii.

F. H. Troschel. Report on the contributions to Ichthyology in 1866. Wiegm. Archiv, xxxiii.

E. B. Truman. On the development of the ovum in the Pike, $2\frac{1}{2}$ plates. Monthly Microsc. Journ. ii.

Reptiles and Batrachia :—

J. A. Allen. Catalogue of Reptiles and Batrachians found in the vicinity of Springfield, Mass. Proc. Bost. Soc. Nat. Hist. xii.

C. v. Bambeke. On the development of *Pelobates fuscus*. (From Mem. R. Acad. Belg.) Ann. Nat. Hist. Ser. 4, iv.

A. Bernhard-Meyer. On the poison-glands of *Callophis intestinalis* and *C. bivirgatus*. (From the Comptes Rendus) Ann. Nat. Hist. Ser. 4, iv.

E. de Betta. The Reptiles and Amphibia of Greece. Proc. R. Venet. Inst. xiv.

A. C. L. Carlleyle. Two new Reptiles from Agra. Journ. Asiat. Soc. Bengal, xxxviii.

E. D. Cope. On the Reptilian orders *Pythonomorpha* and *Streptosauria*. Proc. Bost. Soc. Nat. Hist. xii.

J. E. Gray. On *Hydraspis Gordoni*, a new species from Trinidad, 1 plate. Proc. Zool. Soc. 1868, iii.

A. Günther. First account of tailless Batrachians added to the British Museum, 4 plates. Proc. Zool. Soc. 1868, iii.

M. J. Jullien. On tadpoles reproducing the species (From the Comptes Rendus) Ann. Nat. Hist. Ser. 4, iv.

C. Horne. Snake-poison and reputed antidotes for the same. Zoologist, Ser. 2, iv.

L. Lombardini. On irregular organic forms in Birds and Batrachia, 2 plates. Presented by Mr. Darwin.

O. C. Marsh. On the metamorphosis of *Siredon* and *Amblystoma*. Proc. Bost. Soc. Nat. Hist. xii.

A. B. Meyer. On the venom-apparatus of Serpents, 2 plates. Proc. R. Acad. Sc. Berlin, 1869.

St. G. Mivart. On *Pachybatrachus robustus*, a new genus of anurous Batrachians, woodcut. Proc. Zool. Soc. 1868, iii.

W. C. H. Peters. Note on *Anolis auratus*, Daud. Ann. Nat. Hist. Ser. 4, iv.

W. E. O'Shaughnessy. On *Norops auratus*. Ann. Nat. Hist. Ser. 4, iv.

F. H. Troschel. Report on the contributions to Herpetology in 1866. Wiegm. Arch. xxxiii.

Mollusca :—

G. F. Angas. Twelve new land and marine Shells from Australia and the Solomon Islands, 1 plate. Proc. Zool. Soc. 1869, i.

T. Bland. On certain terrestrial Mollusca, with descriptions of new species. Ann. Lyc. Nat. Hist. N. York, ix.

W. T. Blanford. New species of Cyclophoridæ, of *Ennea* and of *Streptaxis*, 1 plate. Journ. Asiat. Soc. Bengal, xxxviii.

E. Brandt. On the nervous system of *Patella vulgaris*, 1 plate, and of *Chiton fascicularis*, 1 plate. Bull. Acad. Imp. Petersb. xiii.

J. Brazier. On the distribution of *Bulimus miltocheilus* in the Solomon's Archipelago. Proc. Zool. Soc. 1869, i.

C. Claus. On the development of *Cypris*. (From Trans. Nat. Hist. Soc. Marburg) Ann. Nat. Hist. Ser. 4, iv.

J. C. Cox. A new *Haliotis* from N. S. Wales. Proc. Zool. Soc. 1869, i.

H. Eisig. Contributions to the anatomy and history of the development of the sexual organs in *Lymnæus*, 1 plate. Zeitschr. wiss. Zool. xix.

Marq. de Folin. The genus *Meiocerus*, 1 plate. (From the Ann. Soc. Linn. Maine-et-Loire.) Presented by the author.

G. W. Hart. On Oysters and Oyster-spat. Journ. Quek. Microsc. Club, i.

J. G. Jeffreys. On some British freshwater Shells. Ann. Nat. Hist. Ser. 4, iv.

W. S. Kent. On *Embletonia Grayii*, a new British Nudibranch, 1 plate. Proc. Zool. Soc. 1869, i.

H. H. Knocker. On pelagic Shells collected during a voyage from Vancouver's Island to this country. Proc. Zool. Soc. 1868, iii.

F. M'Coy. On a new Volute, $\frac{1}{2}$ plate; On the spire of *Voluta Thatcheri*. Ann. Nat. Hist. Ser. 4, iv.

J. D. Macdonald. On the anatomy of *Diplommatina*, 1 plate. Ann. Nat. Hist. Ser. 4, iv.

A. F. Marion. On a new hermaphrodite Nemertean from the Mediterranean. (From the Comptes Rendus) Ann. Nat. Hist. Ser. 4, iv.

A. G. More. On the animal of *Limnæa involuta*, $\frac{1}{2}$ plate. Ann. Nat. Hist. Ser. 4, iv.

G. Neville. Additional notes on the land-shells of the Seychelles Islands. Proc. Zool. Soc. 1869, i.

G. and H. Neville. On new marine Gasteropoda from Ceylon, 2 articles, 2 plates. Journ. Asiat. Soc. Bengal, xxxviii.

H. Pease. Descriptions of the animals of certain species of Auriculidæ. Proc. Zool. Soc. 1869, i.

L. Reeve. Conchologia Iconica, n. 280, 281. Purchased.

M. Sars. Remarks on the distribution of animal life in the depths of the sea. Ann. Nat. Hist. Ser. 4, iii.

F. Stoliczka. The Malacology of Lower Bengal: *Onchidium*, 2 plates. Journ. Asiat. Soc. Bengal, xxxviii.

R. Tate. Terrestrial Mollusca collected in the island of St. Lucia. Ann. Nat. Hist. Ser. 4, iv.

F. H. Troschel. Report on the contributions to the natural history of Mollusca during 1866. Wiegm. Archiv, xxxiii.

— Wedl. On the systems of capillary vessels in the Gasteropods. Ann. Nat. Hist. Ser. 4, iv.

Journal de Conchyliologie, Ser. 3, ix. completed.

Malakozoologishe Blätter to May, 1869.

Crustacea and Arachnida :—

P. Bonizzi. On the reproduction of *Pholcus phalangioides*. (From the Ann. Soc. Nat. Moden.) Ann. Nat. Hist. Ser. 4, iv.

G. S. Brady. On the Crustacean fauna of the salt marshes of Northumberland and Durham, 2 plates. Nat. Hist. Trans. Northumb. Durh. iii.

R. Buchholz. On the parasitical Crustacea living in Ascidia in the Mediterranean, 7 plates. Zeitschr. wiss. Zool. xix.; abstracted in Ann. Nat. Hist. Ser. 4, iv.

O. P. Cambridge. Catalogue of J. Nietner's collection of Ceylon Araneida, with descriptions of new species. Journ. Linn. Soc. Zool. x.

J. H. Emerton. The habits of Spiders, 1 plate. Amer. Naturalist, ii.

A. Gerstaecker. Report on the scientific contributions to the natural history of Crustacea and Arachnida in 1865–66. Wiegm. Archiv, xxxiii.

C. Heller. On the marine forms of Crustacea which occur in the fresh waters of Southern Europe. Zeitschr. wiss. Zool. xix.; translated in Ann. Nat. Hist. Ser. 4, iv.

E. v. Martens. The South-Brazilian fresh- and brackish-water Crustacea, according to the collections of D. R. Hensel, 2 plates. Wiegm. Archiv, xxxv.

E. D. Nardo. Notes illustrative of 54 species of Crustacea of the Adriatic Sea, 4 plates. Mem. R. Venet. Inst. xiv.

A. M. Norman. Final Report on Shetland Crustacea &c. Rep. Brit. Assoc. Norwich, 1868.

A. Sanders. Notes on Zoosperms of Crustacea, 2 plates. Monthly Microsc. Journ. i.

M. Sars. Remarks on the distribution of animal life in the depths of the sea. Ann. Nat. Hist. Ser. 4, iii.

C. Semper. Remarks on the new genus *Macrobrachium* of Spence Bate. Proc. Zool. Soc. 1868, iii.

S. J. Smith. A new genus and two new species of Scyllaridæ and a new *Æthra* from N. America. (From Sillim. Journ.) Ann. Nat. Hist. Ser. 4, iv.

A. E. Verrill. Descriptions of new American Phyllopod Crustacea. (From Sillim. Journ.) Ann. Nat. Hist. Ser. 4, iv.

H. C. Wood, jun. On the Phalangia and Pedipalpi collected by Prof. Orton in western South America, with descriptions of new African species, 1 plate. Trans. Amer. Philos. Soc. n. ser. xiii.

ENTOMOLOGY:—

Horæ Societatis Entomologicæ Rossicæ, vi. part 2, 2 plates.

Transactions of the American Entomological Society, Washington, ii. parts 1 and 2, 2 plates.

Transactions of the Entomological Society, 1869, parts 2, 3, and 4, and Ser. 3, iii. part 7.

Entomologist and Entomologist's Monthly Magazine, May to October.

J. Bold. On the aculeate Hymenoptera of Northumberland and Durham. Nat. Hist. Trans. Northumb. & Durh. iii.

A. Brandt, jun. Contributions to the history of the development of Libellulidæ and Hemiptera, 3 plates. Mem. Acad. Imp. Sc. Petersb. xiii.

A. G. Butler. Monographic revision of the Lepidoptera hitherto included in the genus *Adolias*, 1 plate. Proc. Zool. Soc. 1868, iii.

——. On *Anemopsyche*, a new genus of Heterocerous Lepidoptera, woodcut. Proc. Zool. Soc. 1869, i.

——. Three new species of *Callidryas*. Ann. Nat. Hist. Ser. 4, iv.

E. P. Cressor. Descriptions of N. American Bees. Proc. Bost. Soc. Nat. Hist. xii.

L. Fasce. The Parasites of Man, 2 plates. Journ. Nat. Sc. Instit. Palermo, iv.

— Foerster. Synopsis of the families and genera of Ichneumons. Trans. Nat.-Hist. Assoc. Rhen. Preuss. xxv.

M. Ganin. Contributions to the anatomy and physiology of the genus *Philopterus*, 1 plate. Zeitschr. wiss. Zool. xix.

A. Gerstaecker. Report on the scientific contributions to Entomology in 1865–66. Wiegm. Archiv, xxxiii.

A. R. Grote. List of the Lepidoptera of N. America, part 1.

T. D. Harris. Entomological Correspondence.—Notes on Larvæ and descriptions of new Insects, edited by S. H. Scudder. Occasional Papers of Bost. Soc. Nat. Hist. i.

T. Kittner. Appendix to the list of Coleoptera found near Boskowitz in Moravia. Trans. Nat.-Hist. Assoc. Brünn, vi.

P. Kramer. Contributions to the anatomy and physiology of the genus *Philopterus*, 1 plate. Zeitschr. wiss. Zool. xix.

L. Landois. Anatomy of *Cimex lectularius*, 2 plates. Zeitschr. wiss. Zool. xix.

S. Lockwood. The goldsmith Beetle and its habits, woodcuts. Amer. Naturalist, ii.

B. T. Lowne. On the rectal papillæ of the Fly, 1 plate. Monthl. Microsc. Journ. ii.

——. Further remarks on the proboscis of the Fly. Journ. Quek. Microsc. Club, i.

R. McLachlan. On the neuropterous genus *Chauliodes* and its allies. Ann. Nat. Hist. Ser. 4, iv.

— Marey. The mechanical reproduction of the flight of Insects. (From the Comptes Rendus) Ann. Nat. Hist. Ser. 4, iv.

V. Motchulsky. Enumeration of new Coleoptera collected during his travels, 1 plate. Bull. Soc. Imp. Nat. Mosc. 1818, ii.

E. Mulsant and — Rey. Natural History of French Coleoptera: tribe Vesiculifera. Ann. Sc. Phys. Nat. Soc. Imp. Agric. Lyons, Ser. 3, xi.

A. Murray. On some points in the history and relations of the Wasp (*Vespa vulgaris*) and *Rhipiphorus paradoxus*. Ann. Nat. Hist. Ser. 4, iv.

E. Norton. Notes on Mexican Ants, 1 plate. Amer. Naturalist, ii.

M. Nowicki. On the caterpillar of the firwood of Copaling and the *Sciara militaris* which proceeds from it, 1 plate.—Descriptions of new Diptera, 1 plate. Trans. Nat. Hist. Assoc. Brünn, vi.

A. S. Packard. Characters of the Lepidopterous family Noctuidæ. Proc. Portl. Soc. Nat. Hist. i.

——. The Parasites of the Honey-bee, 2 plates; A chapter on Flies, 1 plate. Amer. Naturalist, ii.

S. H. Parker. On the respiratory system of Insects. Canad. Naturalist, New Ser. iii.

F. P. Pascoe. Descriptions of new species of Lamiidæ. Ann. Nat. Hist. Ser. 4, iv.

J. C. Puls. Two new Hymenoptera from the Argentine Republic. (From the Trans. Nat. Hist. Soc. Marburg) Ann. Nat. Hist. Ser. 4, iv.

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F. G. Sanborn. Descriptions of new species of *Erirhinus*;—of the larvæ and pupa-case of *Microdon globosus*, Fabr. Proc. Bost. Soc. Nat. Hist. xii.

G. Sandri. On the ætiology of leprosy, including notes on and

figures of *Acarus elephantiacus* and *A. Scabiei*. Proc. R. Venet. Inst. xiii.

E. Saunders. Descriptions of new species of *Paracupta*, Deyr., and of *Conognatha*, Esch., 1 plate. Journ. Linn. Soc. Zool. x.

H. de Saussure. Orthopterological Miscellanies, part 2, 2 plates, Mem. Soc. Phys. Hist. Nat. Geneva, xx.

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S. J. Smith. On the Orthoptera of the State of Maine, with descriptions of new species. Proc. Portl. Soc. Nat. Hist. i.

W. P. Suffolk. On the proboscis of the Blow-fly, 3 plates. Monthl. Microsc. Journ. i.

J. Watson. On the plumules or battledore-scales of Lepidoptera, 2 papers. Mem. Lit. Phil. Soc. Manchester, Ser. 3, iii.; and Monthl. Microsc. Journ. ii., with 3 plates.

F. H. Wenham. Remarks on *Podura*. Monthl. Microsc. Journ. ii.

C. P. Whitney. A new species of *Thecla*. Proc. Portl. Soc. Nat. Hist. xii.

T. V. Wollaston. Coleoptera Atlantidum, 1 vol. 8vo, 1865.—Coleoptera Hesperidum, 1 vol. 8vo, 1867. Purchased.

——. On the Coleoptera of St. Helena. Ann. Nat. Hist. Ser. 4, iv.

A. Yersin. Note on *Pachytilus migratorius* (from the Archiv. Scien. Bibl. Genev.). Presented by Sir J. Lubbock.

Lower Animals :—

T. Alcock. Questions regarding the life-history of Foraminifera.—On *Polymorphina tubulosa*. Mem. Lit. Phil. Soc. Manchester, Ser. 3, iii.

J. Allman. On the structure of *Coppinia arcta*. Rep. Brit. Assoc. Norwich, 1868.

W. Baird. A new species of Earth-worm from North Wales. Proc. Zool. Soc. 1869, i.

——. Remarks on the genera of Annelids of the group *Eunicea*, with descriptions of species. Journ. Linn. Soc. Zool. x.

L. S. Beale. Protoplasm and living matter. Monthl. Micr. Journ. i.

J. S. Bowerbank. A monograph of the siliceo-fibrous Sponges, 4 plates. Proc. Zool. Soc. 1869, i.

R. Buchholz. History of the development of *Alciope*. Zeitschr. wiss. Zool. xix.

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——. On *Ianthella*, a new genus of Keratose Sponges. Proc. Zool. Soc. 1869, i.

——. On *Spoggodes conglomeratus* and a new genus of fleshy Alcyonoids. Ann. Nat. Hist. Ser. 4, iv.

R. Greeff. Researches on some remarkable forms of the type of Arthropoda and Worms, 4 plates. Wiegm. Archiv, xxxv.

E. Grube. New or little-known Annelida from the Red Sea. Proc. R. Acad. Sc. Berlin, 1869.

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S. Lovén. On *Leskia mirabilis*, Gray (from the Swedish). Canad. Naturalist, iii.

——. On *Hyponome Sarsi*, a recent Cystidean (from Trans. Scand. Nat. Christiania, 1868).—On *Spatangus Raschi*. Ann. Nat. Hist. Ser. 4, iv.

F. Lütken. Additions to the history of Ophiuridæ, part 3, Radiolariæ. Trans. R. Dan. Soc. Sc. Copenhagen, Ser. 5, viii.

W. C. M'Intosh. On the early stages of the development of *Phyllodoce maculata*, 1 plate. Ann. Nat. Hist. Ser. 4, iv.

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A. M. Norman. Final report on Shetland Tunicata, Polyzoa, Echinodermata, Actinozoa, Polyzoa, and Porifera. Rep. Brit. Assoc. Norwich, 1868.

A. S. Packard, jun. A few Sea-worms. Amer. Naturalist, ii.

A. Pagenstecher. A new mode of development in *Siphonophoræ*, 1 plate. Zeitschr. wiss. Zool. xix.

L. F. de Pourtalés. Contributions to the Fauna of the Gulf-stream at great depths, 2nd series. Bull. Mus. Comp. Zool. Cambr. U.S.

F. Ratzel. Histological researches on Lower Animals, 2 plates. Zeitschr. wiss. Zool. xix.

M. Sars. Remarks on the distribution of animal life in the depths of the sea. Ann. Nat. Hist. Ser. 4, iii.

G. Schach. On some freshwater *Radiolariæ*, and the place of Radiolarieæ in the class of Rhizopods. Journ. Nat. Hist. Soc. Zurich, xiii.

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——. On the depths of the sea. Ann. Nat. Hist. Ser. 4, iv.

F. H. Troschel. Additional remarks on the genus *Crustulum*. Wiegm. Archiv, xxxv.

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——. North-American Sea-anemones, 1 plate. Amer. Naturalist, ii.

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Phænogamic Botany:—

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L. Goodale. Catalogue of the flowering Plants of Maine. Proc. Portl. Soc. Nat. Hist. i.

L. Grüner. Enumeration of Plants from the Dnieper and lower Konka rivers in S. Russia, 1 plate. Bull. Soc. Imp. Nat. Mosc. 1868, ii.

H. T. Hance. Various notes and descriptions of Chinese plants. Seem. Journ. Bot. vii.

C. Hasskarl. On *Castoreum*, Br. Flora, 1869.

F. v. Herder. Plantæ Raddianæ monopetalæ (continued). Bull. Soc. Imp. Nat. Mosc. 1868, ii.; also separate copies of this and previous parts, presented by Dr. Regel.

S. Kurz. On *Pandanophyllum* and allied genera.—On the species of *Pandanus*. Journ. Asiat. Soc. Bengal, xxxviii.; and separate copies presented by the Author.

J. Lange. Plants rare or new to the Danish Flora. Journ. Bot. Soc. Copenh. ii.

H. Lecoq and M. Lamotte. Catalogue raisonné des Plantes vasculaires du plateau central de la France, 8vo, 1848. Presented by Mr. Hanbury.

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——. Statistics and geographical range of Hawaian Plants. Seem. Journ. Bot. vii.

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Fritz. Mueller. On a dimorphous *Faramea*. Bot. Zeit. 1869.

H. Mueller. On Westphalian Orchideæ, 2 plates. Trans. Nat. Hist. Assoc. Rhen. Prussia, xxv.

A. Œrsted. On the flowers of *Neea theifera* and *Halesia tetraptera*, woodcuts. Bot. Zeit. 1869.

——. On the plant known to the ancients under the name of *Silphium*. Proc. R. Dan. Soc. Sc. 1869.

F. Parlatore. Flora Italiana, ii. (conclusion), iii., iv. part 1. Purchased.

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—— and F. v. Herder. Enumeration of Semonov's Transilian Plants. (From the Bull. Soc. Imp. Nat. Mosc.) separate copy, presented by Dr. Regel.

H. G. Reichenbach, f. *Dendrobium crassinode*; *Cypripedium Parishii*. Flora, 1869.

J. T. Rothrock. Sketch of the flora of Alaska. Rep. Smiths. Inst. 1867.

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R. Spruce. *Palmæ Amazonicæ*, enumeration of the Palms collected by the Author in his travels in Equatorial America. Journ. Linn. Soc. Bot. xi.

J. B. Syme. Report of the London Botanical Exchange Club, 1869. Seem. Journ. Bot. vii.

T. Teplouchoff. On *Picea obovata*, Ledeb., woodcuts. Bull. Soc. Imp. Nat. Mosc. 1869, ii.

E. Timbal-Lagrave and others. Notes on Pyrenean plants, with a plate of a supposed new *Campanula*. Bull. Soc. Bot. Fr. xv.

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Walpers. Annales Botanices Sytematicæ, vii. n. 3. Purchased.

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English Botany, new edition, x. parts 71 to 73. Presented by the Publisher, Mr. Hardwicke.

Botanical Magazine, 3rd Ser. nos. 295–299, 8vo, London, 1869. Purchased.

Physiological and Miscellaneous Botany :—

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———. On the latex in the White Mulberry. Ann. Sc. Nat. Ser. 5, Bot. x.

K. W. v. Gorkom. Report on the Cinchona-culture in Java in 1867 : Journ. Nat. Sc. Neth. Ind. xxx.—The same for 1869 : Flora, 1869.

J. Hanstein. On the boring into the ground of the fruits of Geraniaceæ. Bot. Zeit. 1869.

P. Heiberg. Critical observations on Professor Œrsted's explanation of the flowers of Gymnosperms, woodcuts.—Morphological anatomy of *Eleocharis palustris*, 3 plates. Journ. Bot. Soc. Copenhagen, ii.

— Hennessy. On the possible introduction of South-European plants in the West and South of Ireland. Rep. Brit. Assoc. Norwich, 1869.

F. Hildebrand. Further observations on the fertilization of flowers, 1 plate. Bot. Zeit. 1869.

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——. Anatomy of *Utricularia vulgaris*. Bull. Soc. Bot. Fr. xv.; and Ann. Sc. Nat. Ser. 5, Bot. x.

E. Warming. Review of the most important publications in Danish botanical literature. Flora, 1869.

Cryptogamic Botany:—

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M. Cornu. On the Oospore of *Myzocytium proliferum*.—On *Chytridium roseum*.—On a new genus of Zygnemaceæ. Bull. Soc. Bot. Fr. xvi., 1 plate.

G. Dickie. Notes on the range in depth of marine Algæ. Seem. Journ. Bot. vii.

D. C. Eaton. A new *Adiantum* from Cuba. Bot. Zeit. 1869.

A. M.-Edwards. A new process of preparing filamentous Algæ for the Microscope. Monthl. Microsc. Journ. i.

A. Ernest. Dichotomous key to the genera of Ferns of the Caraccas flora. Trans. Soc. Phys. Nat. Sc. Caraccas.

L. Fasce. Parasites of Man, 1 plate. Journ. Nat. Sc. Techn. Inst. Palermo, iv.

A. Fischer v. Waldheim. Contributions to the biology and to the history of the development of Ustilagineæ, 6 plates. Pringsh. Jahrb. vii.

E. Fournier. On the Hymenophylleæ of Central America collected by C. Wright, Fendler, and Th. Husnot. Bull. Soc. Bot. Fr. xv.

R. E. Grant. On the structure and nature of *Flustræ*. (From Edinb. New Phil. Journ. 1827.) Presented by the Author.

E. Hampe. Mosses collected by H. Krause in Ecuador. Bot. Zeit. 1869.

H. Hoffmann. On Bacteriæ, 1 plate. Bot. Zeit. 1869.

J. E. Hunt. On Mosses new to Britain. Mem. Lit. Phil. Soc. Manchester, Ser. 3, iii.

J. Inzenga. New species of Italian Fungi (continued), 2 plates. Journ. Nat. Sc. Techn. Inst. Palermo, iv., v.

T. Jensen. Additions to the bryology and hepaticology of Denmark. Journ. Bot. Soc. Copenhagen, ii.

C. Kalckbrenner. A new *Polyporus*. Bot. Zeit. 1869.

L. Kny. On the structure and development of the antheridium in Ferns, 1 plate. Proc. R. Acad. Berlin, 1869.

A. Krempelhuber. On *Parmelia perforata*. Flora, 1869.

M. Kuhn. Reliquiæ Mettenianæ (Filices), continued. Linnæa, xxxvi.

——. On the rust of Beet-leaves, *Uromyces Betæ*. Bot. Zeit. 1869.

M. T. Lange. On the Mosses of Tuscany. Journ. Bot. Soc. Copenh. ii.

——. Contributions to Danish Bryology. Journ. Bot. Soc Copenh. iii.

W. A. Leighton. Notulæ Lichenologicæ (continued). Ann. Nat. Hist. Ser. 4, iv.

P. J. Lorentz. On the anatomy of the transverse section of Mosses, 6 plates. Flora, 1869.

——. Note on the indigenous species of *Cinclidotus*. Bot. Zeit. 1869.

R. L. Maddox. On *Mucor Mucedo*, 1 plate. Monthl. Microsc. Journ. ii.

E. v. Martens. Contributions to the Algæ-flora of East India. Flora, 1869.

A. Millardet. On the nature of the pigment in Fucoideæ. Ann. Sc. Nat. Ser. 5, Bot. x.

W. Mitten. Musci Austro-Americani (Enumeration of all South-American Mosses hitherto known to him). Journ. Linn. Soc. xii.

C. Mueller. On a collection of Ceylon Mosses. Linnæa, xxxvi.

G. Niessl. On *Asplenium adulterinum* and its occurrence in Moravia. Trans. Nat.-Hist. Un. Brünn, vi.

W. Nylander. Kurz's Bengal Lichens;—a New-Zealand Cephalodium-bearing *Sphærophora*;—on the chemical reactions of *Parmelia*, of *Ricasolia*, of *Physcia*, of *Umbilicaria*; and other Lichenological papers. Flora, 1869.

C. Prentice. A new *Hypoderris* from Central America. Seem. Journ. Bot. vii.

J. B. Reade. On the Diatom-prism and the true form of Diatom-markings (2 articles). Monthl. Microsc. Journ. ii.

E. Roze. New researches on the antherozoids of Mosses. Bull. Soc. Bot. Fr. xv.

E. Roze and M. Cornu. On two new genera of Saprolegnieæ and Peronosporeæ. Bull. Soc. Bot. Fr. xvi.; Ann. Nat. Hist. Ser. 4, iv.

J. de Seynes. On *Mycoderma vini*, 2 papers. Bull. Soc. Bot. Fr. xv.; Ann. Sc. Nat. Ser. 5, Bot. x.; Bot. Zeit. 1869.

J. de Seynes. On *Mycenastrum*, 2 papers. Bull. Soc. Bot. Fr. xvi.

W. G. Smith. New and rare British hymenomycetous Fungi. Seem. Journ. Bot. vii.

A. Trécul. On Beer-yeast and on *Mycoderma cerevisiæ*. Ann. Sc. Nat. Ser. 5, Bot. x.

V. Trevisan. On the Ferns called *Struthiopteris* and their nearest allies. Proc. R. Venet. Inst. xiv.

H. A. Weddell. The Lichens of the public promenades of Poitiers. Bull. Soc. Bot. Fr. xvi.

F. H. Wenham. Remarks on the structure of Diatoms and Podura. Monthl. Microsc. Journ. ii.

G. Zanardini. Selection of new or rare Fucoideæ of the Mediterranean and Adriatic seas, 8 plates. Mem. R. Venet. Inst. xiv.

——. Iconographia phycologica Mediterraneo-Adriatica, ii. part 4, 8 plates. Purchased.

Palæontology :—

I. P. Barkas. On a supposed Mammalian tooth from the coal measures, woodcuts. Monthl. Microsc. Journ. i.

E. Billings. New Fossils from the Silurian and Devonian rocks of Maine. Proc. Portl. Soc. Nat. Hist. i.

——. Note on the structure of Blastoidea. (From Sillim. Journ.) Ann. Nat. Hist. Ser. 4, iv.

W. B. Carpenter and H. B. Brady. On *Parkeria* and *Loftusia*, two gigantic types of arenaceous Foraminifera. Proc. R. Soc. xvii.

W. Carruthers. The cryptogamic forests of the coal-period. Proc. R. Instit. v.

——. On the structure of the stems of the arborescent Lycopodiaceæ of the coal measures, 1 plate. Monthl. Microsc. Journ. ii.

J. W. Dawson. On some remarkable genera of plants of the coal formation. Canad. Naturalist, New Ser. iii.

——. On Calamites. Ann. Nat. Hist. Ser. 4, iv.

A. Dohrn. On *Julus Brassii*, a new Myriapod from the coal, 1 plate. Trans. Nat. Hist. Assoc. Rhen. Pruss. xxv.

P. M. Duncan. First report on British fossil corals. Rep. Brit. Assoc. Norwich, 1869.

P. M. Duncan and H. M. Jenkins. On *Palæocoryne*, a genus of tubularine Hydrozoa. Proc. R. Soc. xvii.

C. G. Ehrenberg. On the extensive strata of microscopical Bacillariæ under and near the city of Mexico. Proc. R. Acad. Berlin, 1869

C. v. Ettingshausen. The fossil flora of the older coal formation of Wetterau, 5 plates. Proc. Imp. Acad. Sc. Vienna, Nat. Hist. lvii.

G. G. Gemmellaro. On the fauna of the *Terebratula-janitor* limestone of Sicily, 4 plates. Journ. Nat. Sc. Techn. Instit. Palermo, v.

— Grand'Eury. On Calamites and Asterophyllites. (From the Comptes Rendus) Ann. Nat. Hist. Ser. 4, iv.

C. W. Gümbel. Contributions to the Foraminiferous fauna of the Northern Alpine Eocene formation, 4 plates. Trans. R. Acad. Munich, x.

A. Hancock and T. Atthey. Notes on various species of *Ctenodus* obtained from the shales of the Northumberland coal field, 3 plates. —Remains of some Reptiles and Fishes from the same. Nat. Hist. Trans. Northumb. and Durh. iii.

—— ——. On a new Labyrinthodont Amphibian from the Northumberland coal field, 2 papers.—On some curious fossil fungi from the black shale of the Northumberland coal field, 2 plates.—On the generic identity of *Climaxodus* and *Janassa*, two fossil fishes related to the Rays, 1 plate. Ann. Nat. Hist. Ser. 4, iv.

L. Lesquereux. On fucoids in the coal formation, 1 plate.—On species of forest plants from the tertiary in the State of Mississippi, 10 plates. Trans. Amer. Phil. Soc. New Ser. xiii.

S. S. Lyon. Remarks on thirteen new species of Crinoidea from the palæozoic rocks of Indiana, Kentucky, and Ohio, and on peculiarities in the structure of *Dolatocrinus*, 2 plates. Trans. Amer. Phil. Soc. New Ser. xiii.

C. Mayer. Catalogue of the tertiary Mollusca of the Federal Museum at Zurich. Journ. Nat. Hist. Soc. Zurich, xii., xiii.

P. Merian. Fossils of the tertiary of Therwyler, near Basle.—Fossils of St. Verena near Soleure. Trans. Nat. Soc. Basle, v.

Alph. Milne-Edwards. On the ancient fauna of the Mascarene islands. (From the Comptes Rendus) Ann. Nat. Hist. Ser. 4, iv.

J. S. Newbury. Notes on the later extinct floras of N. America, with descriptions of new species. Ann. Lyc. Nat. Hist. N. York, ix.

H. A. Nicholson. Some new species of Graptolites, 1 plate. Ann. Nat. Hist. Ser. 4, iv.

R. Owen. On *Dinornis*, parts 11 and 12, 3 plates. Trans. Zool. Soc. vi.

——. On the remains of a large extinct Lama (*Palauchenia magna*), from quaternary deposits in Mexico. Proc. R. Soc. xvii.

G. de Saporta. On the flora of the Pliocene tufas of Meximieux. Bull. Soc. Bot. Fr. xvi.

A. Schenk. On some remains of plants in the Braunkohl of Saxony. Bot. Zeit. 1869.

A. G. Stickles. Tabular exposition of the present state of Palæophytology. Proc. R. Venet. Inst. xiii., xiv.

W. C. Williamson. On the structnre and affinities of some exogenous stems from the coal measures, 1 plate. Monthl. Microsc. Journ. ii.

H. C. Wood, jun. Contribution to the knowledge of the flora of the coal period in the United States, 2 plates. Trans. Amer. Phil. Soc. New Ser. xiii.

H. Woodward. Fourth report on the structure and classification of fossil Crustacea, 1 plate. Rep. Brit. Assoc. Norwich, 1868.

A. de Zigno. Descriptions of fossil Cycadaceæ from the Oolites of the Venetian Alps. Proc. R. Venet. Inst. xiii.

MISCELLANEOUS.

G. Bidie. Report on the ravages of the Borer in coffee estates, and on coffee culture in southern East India, with a map. Presented by the Author.

Miss Brightwell. Memorials of the life of Mr. Brightwell of Norwich. Presented by the Author.

H. Christy and E. Lartet. Reliquiæ Aquitanicæ, part 9. Presented by the Executors of the late H. Christy.

Forest Administration of India. Reports: Bombay, 1860–61 to 1867–68; Mysore, 1867–68; Sind, 1860–61 to 1866–67, 1867–68, 1868–69; Oudh, 1867–68. Presented by the Indian Department.

T. H. Huxley. Anniversary Address to the Geological Society, 1869. Presented by the Author.

International Horticultural Exhibition of St. Petersburg. Catalogue. Presented by Dr. Regel.

E. Lankester. Sixth Annual Report of the Coroner for the Central District of Middlesex. Presented by the Author.

Washington Department of Agriculture. Report of the Commissioners for 1867. Presented by the Department.

Mr. W. G. Smith, F.L.S., exhibited a specimen of a new British Fungus (*Cantharellus carbonarius*, Alb. and Schw.), discovered by him on burnt earth and charcoal heaps in Epping Forest.

An extract of a letter was read from the Marquis de Folin, re-

questing the cooperation of the Fellows in a work upon which he is engaged, entitled "Les Fonds de la Mer."

The President read the resolutions adopted at a Meeting held on the 21st of June last, with reference to a proposed Memorial to the late Professor Faraday; and stated that he had received a letter from Dr. Bence Jones, the Secretary, intimating that the Subscription List will shortly be closed, and requesting early payment of any subscriptions intended to be contributed by the Fellows of the Linnean Society.

The following papers were read:—

1. "Notes on some Brazilian plants from the neighbourhood of Campinas," by Joaquim Correa de Mello: in a letter to the President. (Translated from the Portuguese.)

2. "Note on two plants (*Althæa Ludwigii* and *Cystanche tubulosa*) new to the Peninsula of India," by N. A. Dalzell, Esq.

3. "On the occurrence of *Astraptor illuminator*, Murr., or a closely allied insect, near Buenos Ayres," by Roland Trimen, M.Ent.Soc. Communicated by Henry Trimen, M.B., F.L.S.

November 18th, 1869.

George Bentham, Esq., President, in the Chair.

The following papers were read:—

1. "Review of the genus *Hydrolea*, with descriptions of three new species," by Alfred William Bennett, Esq., M.A., B.Sc., F.L.S.

2. "On the classification and nomenclature of the species and varieties of *Hedera*," by Shirley Hibbard, Esq. Communicated by William Robinson, Esq., F.L.S.

December 2nd, 1869.

George Bentham, Esq., President, in the Chair.

William R. Guilfoyle, Esq., was elected a Fellow.

Mr. T. B. Flower, F.L.S., exhibited specimens of *Draba aizoides* from Pennard Castle, near Swansea, the station where it was originally found by Dr. Turton in 1803; and from St. Vincent's Rocks, specimens of the depauperated state of *Allium sphærocephalum*, described by Boreau as *A. Deseglisii*.

The following papers were read:—

1. "Flora of Newfoundland," by Henry Reeks, Esq., F.L.S.

2. "Note on *Capparis divaricata*, Lam., and *C. Heyneana*, Wall.," by Hugh F. C. Cleghorn, M.D., F.L.S.

December 16th, 1869.

George Bentham, Esq., President, in the Chair.

The following papers were read:—

1. "On a species of *Ipomœa* affording Tampico Jalap," by Daniel Hanbury, Esq., F.R. & L.S.

2. "On the necessity of a reform in the Generic Nomenclature of Diurnal *Lepidoptera*, illustrated by a review of the Genera proposed from the time of Linnæus to the year 1816," by W. F. Kirby, Esq., M.E.S., &c. Communicated by H. T. Stainton, Esq., Sec. L.S.

3. "A Catalogue of the Aculeate *Hymenoptera* and *Ichneumonidæ* of India and the Eastern Archipelago," by Frederick Smith, Esq., with introductory remarks by A. R. Wallace, Esq. Communicated by W. Wilson Saunders, Esq., V.P.L.S.

January 20th, 1870.

George Bentham, Esq., President, in the Chair.

Nathaniel Lawrence Austen, Esq., Colonel R. Benson, Frederick

Pryor Balkwill, Esq., John Goucher, Esq., George Harrison, Esq., Charles Augustus Robinson, Esq., Edward Taylor, Esq., and Alfred Woodward, Esq., were elected Fellows.

The following papers were read:—

1. "A revision of the Flora of Iceland," by Charles Cardale Babington, M.A., F.R. & L.S., Professor of Botany in the University of Cambridge.

2. "Contributions to British Muscology," by S. O. Lindberg, M.D., Professor of Botany at the University of Helsingfors, Finland. Communicated by J. D. Hooker, M.D., V.P.L.S.

3. "On new British Spiders," by the Rev. O. P. Cambridge. Communicated by James Salter, Esq., F.R. & L.S.

February 3rd, 1870.

George Bentham, Esq., President, in the Chair.

Robert O. Cunningham, M.D., was elected a Fellow.

The following papers were read:—

1. "On *Myrocarpus frondosus*, Allem.," by J. Correa de Mello, of Campinas, in South Brazil; translated from the Portuguese, with a note, by the President.

2. "Revision of the genera and Species of Herbaceous Capsular Gamophyllous *Liliaceæ*," by J. H. Baker, Esq., F.L.S.

3. "On a new form of Cephalopodous Ova," by Cuthbert Collingwood, M.A., F.L.S., &c.

February 17th, 1870.

George Bentham, Esq., President, in the Chair.

Richard B. Sharpe, Esq., was elected a Fellow.

The following papers were read:—

1. "Notes on the Tree-Ferns of British Sikkim; with descrip-

tions of three new species, and a few supplementary remarks on their relation to Palms and Cycads," by John Scott, Curator of the Royal Botanic Gardens, Calcutta. Communicated by Thomas Anderson, M.D., F.L.S.

2. "On the *Commelynaceæ* of Bengal," by C. B. Clarke, Esq., Officiating Superintendent of the Royal Botanic Gardens, Calcutta. Also communicated by Dr. Anderson.

3. Extract of a letter from Dr. H. F. Hance to Dr. Hooker, V.P.L.S., dated Whampoa, 4th October, 1869, on the Botany of the White Cloud (Pakwan) Hills, near Canton. Communicated by Dr. Hooker.

March 3rd, 1870.

J. D. Hooker, Esq., M.D., V.P., in the Chair.

Aaron George Medwin, M.D., and John Beswick Perrin, Esq., were elected Fellows.

The following papers were read:—

1. "Note on Hybridism among *Cinchonæ*," by J. Broughton, B.Sc.; with Introductory Remarks by J. E. Howard, Esq., F.L.S.

2. Letter from Sir Henry Barkly, K.C.B., to Dr. Hooker, on the Natural History of Round Island, one of the dependencies of Mauritius.

March 17th, 1870.

George Bentham, Esq., President, in the Chair.

Mr. Carruthers, F.L.S., exhibited a specimen of a fossil *Osmunda* from the Lower Tertiaries, which was remarkable for the perfect preservation, not only of the tissue, but also of the starch-contents of its cells, and of the mycelium of a parasitic Fungus.

The following papers were read:—

1. "Notes on the Flora and Fauna of Round Island," by Sir Henry Barkly, K.C.B., and Colonel Nicholas Pike. Communicated by Dr. Hooker, V.P.L.S.

2. Extract from a letter of Colonel Lloyd, Surveyor-General of

the Mauritius, on the Natural History of Round Island and Serpent Island. Also communicated by Dr. Hooker.

April 7th, 1870.

George Bentham, Esq., President, in the Chair.

Charles Packe, Esq., was elected a Fellow.

The following papers were read:—

1. "Notes on some *Algæ* found in the North-Atlantic Ocean," by George Dickie, M.D., F.L.S.

2. "On the occurrence of Pleiotaxy of the Perianth in *Philesia*," by R. O. Cunningham, M.D., F.L.S.

3. "Descriptions of some new species of *Annelida* and *Gephyrea* in the Collection of the British Museum," by Wm. Baird, M.D., F.R. & L.S.

April 21st, 1870.

George Bentham, Esq., President, in the Chair.

James Britten, Esq., was elected a Fellow.

The following paper was read:—

"On the Vertebrate Skeleton," by St. George J. Mivart, Esq., F.L.S., &c.

May 5th, 1870.

George Bentham, Esq., President, in the Chair.

Professor Spencer F. Baird, Ritter Georg von Frauenfeld, Dr. William Lilljeborg, M. Charles Naudin, and Dr. Roberto de Visiani were severally elected Foreign Members.

The following papers were read:—

1. "*Libanothamnus*, novum Compositarum genus e Venezuela," proponit Adolphus Ernst, Soc. Caracasanæ Scient. Phys. et Nat. Præses, &c. Communicated by Dr. J. D. Hooker, V.P.L.S.

2. Letter from Dr. Kirk, F.L.S., to Dr. Hooker, containing further observations on the Copal of Zanzibar.

3. Letter from Colonel Grant to Dr. Hooker on the same subject. Both communicated by Dr. Hooker.

The following Report on the Accessions to the Library was laid before the Meeting:—

The Publications of Scientific Bodies received since the date of the last Report (Nov. 4th, 1869) have been the following:—

DENMARK:—

Royal Danish Society of Sciences. *Proceedings 1869, part 2.
Botanical Society of Copenhagen, Journal (Tidskrift), iii. part 2.

SWEDEN:—

Royal Academy of Sciences, Stockholm. Transactions (Handlingar), New Series, v. part 2, vi. vii. part 1.—Proceedings (Œfversigt af Förhandlingar), xxii. (1865) to xxv. (1868).—Obituary Notices of the Members of the Academy deceased since 1854, i. part 1.—Three separate biological papers, and the conclusion of E. Fries's Edible Fungi.

University of Lund, Transactions (Acta or Års-skrift) for 1868.

RUSSIA:—

Imperial Academy of Sciences, St. Petersburg. Memoirs, 7th series, xiii. part 8, and xiv. parts 1 to 7.—Bulletin, xiv. parts 1 to 3.
Entomological Society of Russia, St. Petersburg. Horæ, vi. part 3.
Imperial Society of Naturalists, Moscow. Bulletin 1868, ii. n. 4.

DUTCH NETHERLANDS:—

Royal Academy of Sciences, Amsterdam. Proceedings (Verslagen en Mededeelingen), Natural History section, Ser. 2, iii.—Minutes of General Meetings, May 1868 to April 1869.
Royal Zoological Society of Amsterdam. Contributions to Zoology (Bijdragen), part 9.
Botanical Museum of Leyden. Annales, completion of vol. iv.—Catalogue of the Botanical Museum, part 1, Flora Japonica.

BELGIUM:—

Royal Botanical Society of Belgium, Brussels. Bulletin, viii. n. 1, 2.

GERMANY:—

Natural-History Union of New Pomerania and Rugen. Transactions, i.

Royal Academy of Sciences, Berlin. Proceedings (Monatsberichte), July 1869 to Jan. 1870.

Royal Prussian Horticultural Society. *Journal (Wochenschrift) for 1869.

Silesian Society for the Education of the Fatherland, Breslau. Natural History and Medicine. Transactions, 1868–69.—Proceedings, xlvi., with Reports of the General Natural-History section, and of the Botanical and Entomological sections for 1868.

Imperial Academy of Sciences, Vienna. Proceedings (Sitzungsberichte), Natural History, lviii. parts 1 to 5; lix. parts 1, 2.—Mathematics &c., lviii. parts 2 to 5; lix. parts 1 to 3.—*Minutes of Meetings (Anzeiger), 1869.

Imperial and Royal Geological Institute, Vienna. *Transactions (Verhandlungen), 1869, n. 10.—*Journal (Jahrbuch), xix. n. 3.

Zoologico-botanical Society of Vienna. Transactions (Verhandlungen), xix. 1869.

Royal Academy of Sciences, Munich. *Proceedings (Sitzungsberichte), 1869, i. part 4; ii. parts 1, 2.

Senckenberg Society of Naturalists, Frankfort. Transactions (Abhandlungen), vii. parts 1, 2.

Physico-Medical Society of Würzburg. Transactions (Verhandlungen), new series, i. part 4.

Royal Society of Sciences, Göttingen. Transactions (Abhandlungen), xiv.—Proceedings (Nachrichten), 1869.

SWITZERLAND:—

Helvetic Society of Natural Sciences, Zurich. Memoirs (Neue Denkschriften), xxiii.

Vaudois Society of Natural Sciences, Lausanne. Bulletin, x. n. 62.

ITALY:—

Royal Academy of Sciences, Turin. Proceedings (Atti), iv.—*Minutes of Meetings (Sunti dei Lavori), 1859 to 1865.—*Meteorological and Astronomical Bulletin, 1868.

Royal University of Genoa. Transactions (Atti), i.

Technical Institute of Palermo. Journal of Natural and Economical Sciences, v. parts 3, 4.

PORTUGAL :—

National Museum of Lisbon. Catalogue of the Ornithological Collections, Psittaci and Accipitres.

FRANCE :—

Botanical Society of France. Bulletin, xvi. Extra Session, 1869; Bibliographical Review, D, E; Proceedings (Comptes Rendus des séances), n. 4, 5;—xvii. Bibliographical Review, A.

Entomological Society of France. Annals, Ser. 4, ix. (1869) part 1.

Imperial Society of Agriculture, Lyons. Annals of Physical and Natural Sciences, Ser. 3, viii.

Imperial Academy of Sciences, Lyons. Memoirs, xvii.

Linnean Society of Lyons. Annals, xvii.

Society of Physical and Natural Sciences, Bordeaux. *Memoirs, conclusion of vol. v.—*Minutes of Meetings, 1869.

Imperial Society of Natural Sciences, Cherbourg. Memoirs, xiii.

Linnean Society of Normandy, Caen. Bulletin, Ser. 2, i. ii.

EAST INDIA :—

Asiatic Society of Bengal. Journal, 1869.—*History &c., n. 3, 4. Natural History, 1869, n. 4.—Proceedings to Feb. 7, 1870.

AUSTRALASIA :—

New-Zealand Institute. Transactions and Proceedings, i. (1868).

Entomological Society of New South Wales, Sydney. Transactions, ii. part 1.

Royal Society of Tasmania, Hobarton. Proceedings, 1869.

SOUTH AMERICA :—

Public Museum of Buenos Ayres. Annals, part 6.

Society of Physical and Natural Sciences, Caraccas. *Vargasia, n. 6.

NORTH AMERICA :—

Academy of Natural Sciences, Philadelphia. Journal, New Series,

vi. parts 3, 4; vii.—Proceedings, 1868, 1869 to July.—American Journal of Conchology, v. parts 1, 2.

Museum of Comparative Zoology, Harvard College, Cambridge. Bulletin, n. 9 to 13.

Canadian Institute. Canadian Journal of Science, Literature, and History, xii. part 4.

Canadian Naturalist, New Series, iv.

Great Britain and Ireland :—

British Association for the Advancement of Science. *Report of the Exeter Meeting, 1869.

Royal Society. Philosophical Transactions, clviii. part 2; clix. parts 1, 2.—Proceedings, xviii. n. 115 to 118.—Catalogue of Scientific Papers, iii.

Clinical Society. *Transactions, ii.

East-Indian Association. *Journal, iv. n. 1.

Entomological Society. Transactions, 1869, parts 5, 6; 1870, part 1.

Geological Society. *Quarterly Journal, xxv. part 4, xxvi. part 1.

Linnean Society. Transactions, xxvi. part 4, xxvii. part 1.—Journal, Zoology, x. n. 47; Botany, xi. n. 52.

Quekett Microscopical Club. *Journal, ii. parts 1, 2.

Royal Agricultural Society. *Journal, Ser. 2, vi. part 1.

Royal Asiatic Society. *Journal, New Ser. iv. part 2.

Royal Geographical Society. *Journal, lxxxix.; *Proceedings, xiii. n. 5, xiv. n. 1.

Royal Medical and Chirurgical Society. *Transactions, lii.; Proceedings, vi. n. 5.

Royal Microscopical Society. Monthly Microscopical Journal to May 1870.

Zoological Society. Transactions, vii. parts 1, 2; Proceedings, 1869, parts 2, 3.

Royal Society of Edinburgh. Transactions, xxv. part 2.—Proceedings, 1868–69.

Botanical Society of Edinburgh. Transactions, x. part 1.

Royal Geological Society of Ireland. Journal, xii. n. 2.

Berwickshire Naturalists' Club. Proceedings, 1866 to 1869.

Leeds Philosophical and Literary Society. Report, 1868–69.

Caradoc Field-Club. Transactions, 1868.

Woolhope Naturalists' Field-Club. Transactions, 1868.

Devonshire Association for the Advancement of Science, Literature, and Art. Report and Transactions, iii.

Plymouth Institution and Devon and Cornwall Natural-History Society. Transactions, iii. part 2.

To the Scientific Periodicals received by the Society, and enumerated above, p. v, must be added:—

Archiv für mikroskopische Anatomie. Quarterly, or nearly so. Purchased.

Giornale Botanico Italiano. Received in exchange.

The Biological papers contained in the above Transactions, Proceedings, and Journals, and the separate works added to the Library since the last Report, are as follows:—

Mammalia and General Zoology:—

— Allman. On anthropoid Apes in the Edinburgh Museum of Science and Art. Proc. Edinb. R. Soc. 1868–69.

J. F. Brandt. Researches on the genus *Hyrax*, especially as to the Anatomy, Affinities, and Geographical distribution, 3 plates. Mem. Imp. Acad. Sc. St. Petersb. xiv.

W. Breslauer. On the Development of the Ligamentous tissue. Archiv mikr. Anat. v.

G. Burmeister. Catalogue of the Mammifers of the Public Museum of Buenos Ayres.—Description of four species of Delphinidæ from the Argentine coast, 8 plates. Ann. Mus. Publ. Buenos Ayres, part 6.

E. D. Cope. On *Agaphelus*, a genus of toothless Cetacea. Proc. Acad. Nat. Sc. Philad. 1868.

E. Coues. A new *Arvicola* from Southern Arizona. Proc. Acad. Nat. Sc. Philad. 1868.

Duplessis and Combes. The Vertebrata of Orbe, Mammifera. Bull. Soc. Vaud. Sc. Nat. x.

L. F. Fitzinger. Revision of the Natural Family of Feles. Proc. Imp. Acad. Sc. Vienna, lviii. lix.

——. The genera of Antelopes and their natural allies. Proc. Imp. Acad. Sc. Vienna, lix.

W. H. Flower. Description of the Skeleton of *Delphinus sinensis*, 2 plates. Trans. Zool. Soc. vii.

W. H. Flower. On the Anatomy of *Proteles cristatus*, 1 plate and woodcuts.—On four specimens of the Common Fin-whale stranded on the south coast of England, 1 plate. Proc. Zool. Soc. 1869.

A. v. Frantzius. The Mammalia of Costa Rica. Wiegm. Archiv, xxxv.

J. E. Gray. Note on the young of the Spotted Hyæna, woodcuts.—On the Guemul or Roebuck of Southern Peru, woodcuts. Proc. Zool. Soc. 1869.

O. v. Grimm. The semicircular channels in the Cat. Bull. Imp. Acad. Sc. St. Petersb. xiv.

G. Gulliver. On the muscular sheath of the cardiac end of the œsophagus of the Aye-aye. Proc. Zool. Soc. 1869.

A. Günther. Record of Zoological Literature, iii. Purchased.

E. Hamilton. On a variety of *Canis vulpes* found in the Ardennes. Proc. Zool. Soc. 1869.

P. Harting. On the relative extent of wings, and weight of pectoral muscles, in flying vertebrated animals. Arch. Néerl. Sc. Exact. et Nat. Haarlem, iv.

J. Hector. List of bones of Seals and Whales in the Colonial Museum of Wellington, New Zealand. Ann. Nat. Hist. ser. 4, v.

T. H. Huxley. On the representatives of the malleus and the incus of Mammalia in other Vertebrata, woodcut. Proc. Zool. Soc. 1869.

A. Koschennikoff. On the prolongation of the axis-cylinder of the nerve-cells in the lesser brain of the Calf, $\frac{1}{2}$ plate. Archiv mikrosk. Anat. v.

W. Koster. On the formation of eggs in the ovarium of Mammalia after birth. Proc. R. Acad. Sc. Amsterdam, Nat. Sc. Ser. 2, iii., and Arch. Néerl. Sc. Ex. et Nat. Haarlem, iv.

— Kupffer. The connexion of race between Ascidia and Vertebrata. Archiv mikrosk. Anat. v.

A. Macalister. On the myology of the Wombat (*Phascolomys wombata*) and the Tasmanian Devil (*Sarcophilus ursinus*), woodcut. Ann. Nat. Hist. Ser. 4, v.

A. W. Malm. On the Whale stranded in the Bohus district. Proc. R. Acad. Sc. Stockh. xxiii.

——. On a skeleton of *Balænoptera musculus*, Compan., from Finland, in the Zoological Museum of Stockhom, 1 plate. Proc. R. Acad. Sc. Stockh. xxv.

M. A. Milne-Edwards. On some Mammalia from Eastern Thibet (from the Comptes Rendus). Ann. Nat. Hist. Ser. 4, v.

J. Murie. Anatomy of the Lemuroidea, 6 plates. Trans. Zool. Soc. vii.

W. C. H. Peters. On some Mexican Amphibia. Proc. R. Acad. Sc. Berlin, 1869.

— Podcopaew. On the termination of the nerves in the epithelial layer of the skin, woodcuts. Archiv mikrosk. Anat. v.

L. Sabaneeff. Materials for the Fauna of the Government of Jaroslaeff (cont.). Bull. Soc. Imp. Nat. Mosc. 1868, ii.

G. Saviotti. On the finer structure in the pancreas of animals, 2 plates. Archiv mikrosk. Anat. v.

C. M. Scammon. On the Cetaceans of the W. coast of N. America. Proc. Acad. Nat. Sc. Philad. 1869.

M. Schultze. On the termination of the nerves in the retina of the eye in Man and Animals, 1 plate. Archiv mikrosk. Anat. v.

P. L. Sclater. On *Macacus andamanensis* and *Perodicticus Potto*, woodcuts.—On *Phacochœrus Æliani*, 1 plate.—On *Ailurus fulgens*, woodcut.—On *Orycteropus capensis*, woodcut.—On two Mammals from the Zoological Society's Gardens, 1 plate. Proc. Zool. Soc. 1869.

B. Simpson. Note on *Ailurus fulgens*, 1 plate. Proc. Zool. Soc. 1869.

R. Swinhoe. On the Cervine Animals of the Island of Hainan, China, woodcuts. Proc. Zool. Soc. 1869.

T. H. Troschel. Report on the contributions to the Natural History of Mammalia during 1868. Wiegm. Arch. xxxv.

F. H. Welch. On *Lepus americanus*, woodcuts. Proc. Zool. Soc. 1869.

Ornithology :—

M. Allport. On the local distribution of some Tasmanian Animals. Proc. R. Soc. Tasmania, 1867.

J. V. Barboza du Bocage. New Birds of W. Africa, 1 plate. Proc. Zool. Soc. 1869.

G. E. Bulger. Note on the habits of *Myrmecocichla formicivora*, as observed near Windvogelberg, S. Africa. Proc. Zool. Soc. 1869.

W. Buller. Notes on Herr Finsch's Review of the Author's Essay on New-Zealand Ornithology.—On the Ornithology of New Zealand. Trans. New-Zealand Instit. i.

H. B. Butcher. List of Birds collected at Laredo, Texas, in 1866 and 1867. Proc. Acad. Nat. Sc. Philad. 1868.

Dr. Castro, of Para. Note on the Yapou, or Chéo-Chéo, *Cassius icteronotus*. Bull. Soc. Linn. Norm. Ser. 2, ii.

E. Coues. A monograph of Alcidæ.—List of Birds collected in Southern Arizona by F. Palmer. Proc. Acad. Nat. Sc. Philad. 1868.

P. Doderlein. Avifauna of the provinces of Modena, of Reggio, and of Sicily. Journ. Instit. Tecn. Palermo, v.

D. G. Elliot. Monograph of the genus *Pelecanus*. Proc. Zool. Soc. 1869.

O. Finsch. Notes on Mr. Buller's Essay on New-Zealand Ornithology (translation). Trans. New-Zeal. Instit. i.

O. Finsch and G. Hartlaub. On a small collection of Birds from the Tonga Islands. Proc. Zool. Soc. 1869.

J. Gould. Description of a supposed new Pigeon. Ann. Nat. Hist. Ser. 4, v.

——. On a new genus and species of *Trochilidæ*.—A new species of *Dacelo* from N.W. Australia. Proc. Zool. Soc. 1869.

G. R. Gray. Descriptions of new species of Birds from the Solomon and Banks's Groups of Islands. Ann. Nat. Hist. Ser. 4, v.

J. Haast. On the measurement of Dinornis-bones. Trans. New-Zeal. Instit. i.

G. Hartlaub. On *Anarhynchus*. Proc. Zool. Soc. 1869.

——. Report on the contributions to the Natural History of Birds during 1868. Wiegm. Archiv, xxxv.

C. Horne. Notes on *Meniceros bicornis* of India.—On *Ploceus Baya* and its nest. Proc. Zool. Soc. 1869.

F. W. Hutton. Notes on the Birds of Great and Little Barrier Islands. Trans. New-Zeal. Instit. i.

T. C. Jerdon. Notes on some new species of Birds from the N.E. frontier of India. Proc. Asiat. Soc. Beng. 1870.

G. N. Lawrence. Seven new American Birds. Proc. Acad. Nat. Sc. Philad. 1868.

W. V. Legge. On the habits of *Pedionomus torquatus*, Gould. Proc. Zool. Soc. 1869.

Lisbon National Museum. Catalogue of the Ornithological Collections: Psittaci and Accipitres. Presented by the Museum.

W. Meves. Contributions to the Ornithology of Sweden. Proc. R. Acad. Stockh. xxv.

W. v. Nathusius. On the structure of the egg-shell of the New-

Zealand Moa, and the systematic value of the structure of egg-shells, 1 plate. Zeitschr. wiss. Zool. xx.

A. and E. Newton. On the Osteology of the Solitaire, *Pezophaps solitaria*, Gmel., 10 plates. Phil. Trans. R. Soc. clix.

R. Owen. On *Dinornis*, parts 13, 14. 10 plates. Trans. Zool. Soc. vii.

W. K. Parker. On the structure and development of the skull in the common Fowl, 7 plates. Phil. Trans. R. Soc. clix.

E. P. Ramsay. On the Cuckoos of the neighbourhood of Sydney and their foster-parents, 1 plate. Proc. Zool. Soc. 1869.

R. Ridgway. Notices of obscurely known American Birds. Proc. Acad. Nat. Sc. Philad. 1869.

J. Salvadori. Notes on some Birds of Costa Rica. Proc. (Atti) Acad. Sc. Turin, iv.

P. L. Sclater. On the species of the genus *Micrastur*.—A new Mexican Wren, 1 plate.—On the breeding of Birds in the Zoological Society's Gardens during the last 20 years.—On two new species of *Synallaxis*, 1 plate. Proc. Zool. Soc. 1869.

P. L. Sclater and O. Salvin. On Venezuelan Birds collected by Mr. A. Goering, 1 plate.—On Mexican Birds collected by Mr. H. S. le Strange.—New American Birds, 1 plate.—On two Birds collected by Mr. E. Bartlett in Eastern Peru, 1 plate.—Three new species of Tanagers from Veragua, 2 plates.—On Peruvian Birds collected by Mr. Whitely, part 5.—Third List of Birds collected at Conchitas, Argentine Republic, by Mr. W. H. Hudson. Proc. Zool. Soc. 1869.

R. B. Sharpe. On the genus *Alcyone*.—Additional notes on the genus *Ceyx*.—On the Birds of Angola, 1 plate.—On a new *Tanysiptera*. Proc. Zool. Soc. 1869.

C. Smith. The Birds of Somersetshire, 1 vol. 8vo. Presented by the Author.

C. J. Sundevall. Conspectus of Picine Birds. Presented by the Royal Academy of Sciences, Stockholm.

R. Swinhoe. Two new Sun-birds from Hainan Island, S. China, Ann. Nat. Hist. Ser. 4, iv.

———. Three new Birds from China. Ann. Nat. Hist. Ser. 4, v.

Visct. Walden. New Birds from Southern Asia. Ann. Nat. Hist. Ser. 4, v.

J. v. Wickevoort Crommelin. Notes on the Ornithological Fauna of the Netherlands, 2 papers. Archiv Néerl. Sc. Exact. et Nat. iv.

Ibis, Nos. 20 to 22. Purchased.

Ichthyology :—

M. Allport. On the local distribution of some Tasmanian animals. Proc. R. Soc. Tasm. 1867.

———. Reports on the introduction of Salmon and Sea-trout Ova into Tasmania. Proc. R. Soc. Tasm. 1869.

P. Bleeker. On the species confounded under the name of *Genyoroge benghalensis*, Günth.—A new *Cæsio* from the Isle of Nossibé.—A new *Chætopterus* from Amboina.—A new *Glyphidodon* from Réunion Island.—Two new species of *Alticus* from Madagascar.—Ninth Notice of the Ichthyological Fauna of Japan.—A new *Platycephalus*, 1 plate. Proc. R. Acad. Sc. Amsterdam.

J. F. Brandt. On the Europeo-Asiatic Sturionides. Bull. Imp. Acad. Sc. St. Petersb. xiv.

W. B. Carpenter. Description of some peculiar Fish's Ova. Monthl. Microsc. Journ. iii.

E. D. Cope. On the distribution of Freshwater Fishes in the Alleghany region of S.W. Virginia, 3 plates. Journ. Acad. Nat. Sc. Philad. New Ser. vi.

F. Day. On the Fishes of Orissa, 2 papers.—On some Fishes of the Indian Museum, 2 papers.—On the Freshwater Fishes of Burma. Proc. Zool. Soc. 1869.

A. Duméril. On the presence of peculiar Organs in the Rays of the genus *Cephaloptera* (from the Comptes Rendus). Ann. Nat. Hist. Ser. 4, v.

R. N. Dybowski. On the Fish-fauna of the river Onon, and of the Ingoda in Transbaikalia. Trans. Zool. Bot. Soc. Vienna, xix.

— Guichenot. On *Nesobastes* from Australia, *Periolophus* from the Indian Ocean, *Salarychthys* from Brazil, and *Lophiopsis* from the Cape, four new genera of fishes. Mem. Soc. Imp. Sc. Nat. Cherbourg, xiii.

G. Gulliver. On some nondescript Bones in the skull of Osseous fishes. Ann. Nat. Hist. Ser. 4, iv.

A. Günther. Report of a second collection of Fishes made at St. Helena, by J. C. Melliss, 1 plate.—On some Fishes from the Peruvian Amazons, woodcuts.—Contributions to the Ichthyology of Tasmania. Proc. Zool. Soc. 1869.

T. W. Jones. On the Caudal Heart of the Eel, 1 plate. Phil. Trans. R. Soc. clviii.

H. Jouan. On some Noxious Fishes from Japan.—On some Marine Fishes of Hong Kong. Mem. Soc. Imp. Sc. Nat. Cherbourg, xiii.

A. Kner. New Fishes from the Museum of Godeffroy and Son, of Hamburg, 2 papers, 9 plates. Proc. Imp. Acad. Sc. Vienna, Nat. Hist. lviii.

A. Kowalewski, P. Owsiannikow, and N. Wagner. On the generation of Sturgeons. Bull. Imp. Acad. Sc. St. Petersb. xiv.

A. W. Malm. On the development and structure of Pleuronectidæ, 2 plates. Trans. R. Acad. Sc. Stockh. New Ser. vii.

A. F. Malmgren. Contributions to the Fish-fauna of Iceland. Proc. R. Acad. Sc. Stockh. xxiv.

J. Norris. On a new *Osmerus* from the Schuylkill. Proc. Acad. Nat. Sc. Philad. 1868.

P. Owsiannikow. On the generation of *Petromyzon fluviatilis*. Bull. Imp. Acad. Sc. Petersb. xiv.

W. C. H. Peters. New or little-known Fishes from the Berlin Museum. Proc. R. Acad. Sc. Berlin, 1869.

R. L. Playfair. Contributions to the Ichthyology of Zanzibar. Proc. Zool. Soc. 1869.

— Reineck. On the arrangement in layers of the Trout-spawn, 1 Plate. Archiv mikrosk. Anat. v.

F. Steindachner. The Gymnotidæ of the Imperial Cabinet of Natural History of Vienna. Proc. Imp. Acad. Sc. Vienna, Nat. Hist. lviii.

F. H. Troschel. Report on the contributions to Ichthyology during 1868. Wiegm. Archiv, xxxv.

Erpetology :—

E. D. Cope. On the Reptilia and Batrachia obtained in the Orton Expedition to Equador and the Upper Amazon.—On the Crocodilian genus *Perosuchus*.—Sixth contribution to the Herpetology of Tropical America.—On the Reptiles of the Old World, part 2. Proc. Acad. Nat. Sc. Philad. 1868.

E. Coues. Two new Snakes from Southern Arizona. Proc. Acad. Nat. Sc. Philad. 1868.

A. Goette. Researches on the development of *Bombinator igneus*, 2 plates. Archiv mikrosk. Anat. v.

A. Golubaew. On the structure and development of the capillary vessels of the Frog, 1 plate. Archiv mikrosk. Anat. v.

J. E. Gray. On the families and genera of Tortoises, 1 plate, woodcuts.—*Mauremys laniaria*, a new freshwater Tortoise, 1 plate. —Description of *Emys flavipes*, 1 plate. Proc. Zool. Soc. 1869.

A. Günther. Report on two collections of Indian Reptiles, 3 plates, woodcuts. Proc. Zool. Soc. 1869.

H. Jouan. On some Reptiles from Pulo Condor and Lower Cochin China. Mem. Soc. Imp. Sc. Nat. Cherbourg, xiii.

G. Krefft. New Australian Snakes, woodcuts. Proc. Zool. Soc. 1869.

C. Langer. On the lymphatic-vessel system in the Frog, 1 plate. Proc. Imp. Acad. Sc. Vienna, lviii.

A. Ljungman. On some new Ophiuridæ. Enumeration of the living Ophiuridæ hitherto known. Proc. R. Acad. Stockholm, xxiii.

— Marius and Van Loir. Experimental researches on the anatomical and functional regeneration of the spinal cord in Frogs, 1 plate. Monthl. Microsc. Journ. iii.

St. G. Mivart. On the myology of *Menopoma alleghaniense*, woodcuts.—On the classification of Anurous Batrachians.—On the myology of *Menobranchus lateralis*, woodcuts. Proc. Zool. Soc. 1869.

V. Payot. Erpetology of the neighbourhood of Mont Blanc. Ann. Sc. Phys. Nat. Soc. Imp. Agric. Lyons, Ser. 3, viii.

W. C. H. Peters. On *Phyllodactylus galapagensis*, a new Lizard from the Galapagos.—On new Saurians and Batrachians. Proc. (Monatsber.) R. Acad. Sc. Berlin, 1869.—On the ductus pneumaticus of the lower jaw in Crocodiles. Ibid. 1870.

— Stoliczka. Observations on *Chameleo vulgaris*. Journ. Asiat. Soc. Bengal, 1870.

A. Strauch. Synopsis of Viperideæ, with detailed geographical distribution, 2 plates. Mem. Imp. Acad. Sc. Petersb. xiv.

— Tolotschnikoff. On the relation of the nerves to the smooth muscle-fibres in the bladder of the Frog. Archiv mikrosk. Anat. v.

F. H. Troschel. Report on the contributions to Herpetology during 1868. Wiegm. Archiv, xxxv.

Mollusca :—

Amsterdam Zoological Society's Museum. Catalogue of Shells. Bijdr. Tot. Dierk. part 9.

H. Adams. New marine Shells, 1 plate. Proc. Zool. Soc. 1869.

G. F. Angas. Eight new species of *Helicidæ* from the Western Pacific Andes, 1 plate. Proc. Zool. Soc. 1869.

R. Bergh. Anatomy of *Pleurophyllidia formosa*, 3 plates. Trans. Zool. Bot. Soc. Vienna, xix.

W. T. Blanford. New Land and Freshwater Mollusca from Upper Burma and Yunan.—On the species of *Hyrax* inhabiting Abyssinia and the neighbouring countries. Proc. Zool. Soc. 1869.

J. Brazier. Notes on the localities of two species of Land Shells and three species of Volutes.—List of species of *Conus* found in Port Jackson. Proc. Zool. Soc. 1869.

J. C. Cox. Three new Marine Australian Shells, 1 plate. Proc. Zool. Soc. 1869.

E. Deslongchamps. On some Marine Mollusca observed at Luc. Bull. Soc. Linn. Norm. Ser. 2, ii.

W. Fleming. On the hair-bearing sense-cells of the epidermis of Mollusca, 1 plate. Archiv mikrosk. Anat. v.

G. v. Frauenfeld. Contributions to the Fauna of the Nicobar Islands. Trans. Zool. Bot. Soc. Vienna, xix. Also separate copies presented by the author.

G. E. Fryer. Contributions to the knowledge of Pelagic Mollusca, 1 plate. Journ. Asiat. Soc. Bengal, 1869.

C. Hartman. Land and Freshwater Mollusca from the eastern environs of Stockholm. Proc. R. Acad. Sc. Stockholm, xxiii.

J. Gwyn Jeffreys. A new British Land Shell. Ann. Nat. Hist. Ser. 4, v.

W. Keferstein. On the anatomy and history of the development of some Marine *Planaria* from St. Malo. Trans. R. Soc. Sc. Göttingen, xiv.

H. de Lacaze-Duthiers. Morphological researches on Mollusca (from the Comptes Rendus). Ann. Nat. Hist. Ser. 4, v.

J. Lea. New Unionidæ, Melanidæ, &c. chiefly from the United States, 25 plates. Journ. Acad. Nat. Sc. Philad. New Ser. vi.

——. Nine Unionidæ from Lake Nicaragua.—Sixteen new species of *Unio* of the United States.—On some singular forms of Chinese species of *Unio*.—Four new exotic Unionidæ.—Twenty-six new Melanidæ of the United States.—Seven new species of *Unio* from North Carolina.—Two new Unionidæ from Ecuador.—Melanidæ of the United States.—Six new Freshwater Shells. Proc. Acad. Nat. Sc. Philad. 1868, 1869.

E. Lindström. On the recent Mollusca of Gothland, 3 plates. Presented by the Royal Academy of Sciences, Stockholm.

——. On the genus *Trimerella*, Billings, of Brachiopoda, 1 plate. Proc. R. Acad. Sc. Stockholm, xxiv.

W. Marshall. On the natural history of Chitons, 1 plate. Arch. Néerl. Sc. Exact. et Nat. iv.

V. Payot. Malacology of the neighbourhood of Mont Blanc. Ann. Sc. Phys. Nat. Soc. Imp. Agric. Lyons, ser. 3, viii.

H. Pearse. On the classification of the Helicterina. Proc. Zool. Soc. 1869.

C. Semper. On a new Australian genus of *Testacellida*, woodcut. Zeitschr. wiss. Zool. xix., translated in Ann. Nat. Hist. Ser. 4, v.

G. B. Sowerby. Thesaurus Conchyliorum, parts 26 to 28. Purchased.

F. H. Troschel. Report on the contributions to the natural history of Mollusca during 1868. Wiegm. Archiv, xxxv.

C. A. Westerlund. Malacological observations made in a tour through Blekin, Kalmor district, and Öland in 1865. Proc. R. Acad. Stockholm, xxii.

G. F. Whiteaves. On the Marine Mollusca of Eastern Canada. Canad. Naturalist, iv.

Journal de Conchyliologie, Ser. 3, x. n. 1, 2. Malakozoologische Blätter, to Dec. 1869, and American Journal of Conchology, Philadelphia, v. parts 1, 2.

See also papers on Deep-sea Dredgings under Lower Animals.

CRUSTACEA AND ARACHNIDA:—

— Balbiani. On the constitution and mode of formation of the ovum of the *Sacculinæ* (from the Comptes Rendus). Ann. Nat. Hist. Ser. 4, v.

G. Bellucci. On the food and sleep of Tritons, and the reproduction of their amputated members. Proc. R. Ac. Sci. Turin, iv.

J. Blackwall. A new species of *Epeïra*. Ann. Nat. Hist. Ser. 4, iv.

——. Spiders collected by Prof. E. P. Wright near Lucca, 2 plates. Journ. Linn. Soc. Zool. x.

O. P. Cambridge. Nietner's Ceylon *Araneida*, with several new species and one new genus.—Two new species and a new genus of *Araneida*. Journ. Linn. Soc. Zool. x.

——. On some Spiders and Scorpions from St. Helena, with descriptions of new species, 1 plate. Proc. Zool. Soc. 1869.

A Dohrn. Researches on the structure and development of Arthropoda: *Praniza maxillaris*, 3 plates, *Paranthura costana*, 1 plate. —On the structure and development of *Arthropoda*.—Six new *Decapoda Loricata*, 1 plate. Zeitschr. wiss. Zool. xx.

G. Eisen and A. Stuxberg. New Myriapoda described in an account of the Sand Island of Gothland. Proc. R. Acad. Sc. Stockh. xxv.

A. Goës. Amphipodous Crustacea of the Sea of Spitzbergen, with some other Arctic species, 6 plates. Proc. R. Acad. Sc. Stockh. xxii.

E. Grube. Descriptions of *Arachnoidea*, *Pycnogonoidea*, and Crustacea from St. Vaast (Brittany). Trans. Siles. Soc. Nat. Hist. 1868–69.

A. Humbert and H. de Saussure. Descriptions of Myriapoda from the Museum at Vienna. Trans. Zool. Bot. Soc. Vienna, xix.

H. Jouan. On some Crustacea from Pulo Condor and Lower Cochin China. Mem. Soc. Imp. Sc. Nat. Cherbourg, xiii.

J. A. Lyttkens. Contributions to the Anatomy of Crustacea. Trans. Univ. Lund, 1868.

J. D. Macdonald. On an apparently new species of minute parasitic Cirripeds, 2 plates. Proc. Zool. Soc. 1869.

S. J. MacIntyre. The structure of the scales of certain *Thysanura*, 1 plate. Monthl. Microsc. Journ. iii.

E. Metschnikow. On a larva-stage of *Euphausia*, 1 plate. Zeitschr. wiss. Zool. xix.

J. Munter and — Bucholz. On *Balanus improvisus*, Darw., 2 plates. Trans. Nat. Hist. Un. New Pomer. i.

R. Ollson. Prodromus of a fauna of parasitical *Copepoda* of Scandinavia, 2 plates. Trans. Univ. Lund, 1868.

J. R. Pigott. The markings of the *Podura*-scales. Monthl. Microsc. Journ. iii.

F. Plateau. Researches on the freshwater Crustacea of Belgium. Ann. Nat. Hist. Ser. 4, v.

M. Schultze. The ridges in the retina of *Cephalopoda* and *Heteropoda*, 2 plates. Archiv mikrosk. Anat. v.

F. Stoliczka. Contributions to the knowledge of Indian *Arachnoidea*, 3 plates. Journ. Asiat. Soc. Bengal, 1869.

T. Thorell. On *Aranea lobata*, Pal. Proc. R. Acad. Sc. Stockh. xxiv.

E. P. Wright. On a new species of *Pennella*, 1 plate. Ann. Nat. Hist. Ser. 4, 5.

See also papers on Deep-sea Dredgings under Lower Animals.

Entomology :—

C. H. Boheman. The Insect-fauna of Spitsberg, 1 plate. Proc.

R. Acad. Sc. Stockh. xxii.—Contributions to the Insect-fauna of Gothland. Ibid. xxiv.

F. Brauer. Descriptions of new *Neuroptera* from the Museum Godeffroy in Hamburg.—On the metamorphoses of Insects, with reference to the theory of descent, 1 plate.—A new species of *Iapyx*, Hallid.—Contributions to the Biology of *Acrocerida*.—On the metamorphoses of *Mantispa styriaca*, Pod., 1 plate.—On the larvæ of *Diptera* in connexion with Schiner's new system.—On the metamorphoses of *Hæmatoptera pluvialis*. Trans. Zool. Bot. Soc. Vienna, xix.

A. G. Butler. List of a small collection of Butterflies from the South Seas.—On new Diurnal Lepidoptera. Ann. Nat. Hist. Ser. 4, v.

J. A. Chapman. On the parasitism of *Rhipiphorus paradoxus*. Ann. Nat. Hist. Ser. 4, v.

F. Cohn. Researches on the ravages committed by Insects on the cornfields in the summer of 1869. Trans. Siles. Soc. Nat. Hist. 1868–69.

M. A. Fauvel. Memoir on the *Staphylinida* of Chile, $\frac{1}{2}$ plate.—Catalogue of New-Caledonian Coleoptera, $\frac{1}{2}$ plate. Bull. Soc. Linn. Norm. Ser. 2, i.—The Gallo-Rhenan Coleopteran Fauna, Introduction, 4 plates. Ibid. ii.

R. Felder. Diagnoses of Lepidoptera collected by H. v. Hedemann in Mexico. Trans. Zool. Bot. Soc. Vienna, xix.

J. A. Count Ferrari. Three new W. Asiatic Beetles. Trans. Zool. Bot. Soc. Vienna, xix.

F. X. Fieber. Synopsis of European *Deltocephala*, 2 plates. Trans. Zool. Bot. Soc. Vienna, xix.

Prof. Förster. On Gall-wasps. Proc. Zool. Bot. Soc. Vienna, xix.

M. Ganin. On the embryonal covering in the embryos of Hymenoptera and Lepidoptera. Mem. Imp. Acad. Sc. Petersb. xiv.

O. v. Grimm. On the apparatus for closing the stigmata in *Periplaneta orientalis*.—Anatomical researches on the antennæ of Insects. Bull. Imp. Acad. Sc. Petersb. xiv.

R. E. Guérin-Méneville. Revue de Sériculture comparée, 4 vols. 8vo. 1863–1866. Presented by Capt. Lendy.

H. Kawall. Nine new *Ichneumonida* from Curonia. Bull. Soc. Imp. Nat. Mosc. 1868, ii.

W. C. Kindberg. Observations on the Diurnal Lepidoptera of East Gothland. Proc. R. Acad. Sc. Stockh. xxiv.

F. Kowary. Contributions to the Diptera-fauna of Hungary. Trans. Zool. Bot. Soc. Vienna, xix.

J. Kriechbaumer. Hymenopterological contributions. Trans. Zool. Bot. Soc. Vienna, xix.

J. L. Leconte. Analytical table of the species of *Baridius* inhabiting the United States.—The *Gyrinidæ* of N. America north of Mexico.—On the species of *Agonoderas*, *Bradycellus*, and *Stenolophus* inhabiting America north of Mexico. Proc. Acad. Nat. Sc. Philad. 1868.

——. List of Coleoptera collected in Vancouver's Island by H. and J. Matthews, with descriptions of new species. Ann. Nat. Hist. Ser. 1, iv.

B. T. Lowne. The anatomy and physiology of the Blow-fly (*Musca vomitoria*, Linn.), 8vo, 10 plates. Presented by the Author.

——. On the structure of the cornea of the Bee. Journ. Quek. Microsc. Club, ii.

A. Macalister. On *Gyropus dicotylis*, a new parasite, woodcut. Proc. Zool. Soc. 1869.

J. Mann. Lepidoptera collected in Dalmatia. Trans. Zool. Bot. Soc. Vienna, xxix.

E. Marno. The types of the larvæ of Diptera in support of the new system of Diptera. Trans. Zool. Bot. Soc. Vienna, xiv.

J. W. Meigen. Systematical description of the European Diptera, 7 vols., with an eighth or supplemental vol. by H. Loew. Purchased.

J. Mik. Contributions to the Diptera-fauna of Austria, 1 plate. Trans. Zool. Bot. Soc. Vienna, xix.

P. Millière. Figures and descriptions of unpublished Caterpillars and Lepidoptera, 4 plates. Ann. Soc. Linn. Lyons, xvii.

— Mulsant. Monograph of Longicornes. Ann. Sc. Phys. Nat. Imp. Agr. Soc. Lyons, Ser. 3, viii.

——. Monograph of *Coccinellida* (conclusion). Mem. Imp. Acad. Sc. Lyons, xvii.

— Mulsant and — Rey. Monograph of Coleoptera of the tribe of *Piluliformia*, 2 plates. Ann. Soc. Linn. Lyons, xvii.

A. Murray. On the relations between Wasps and *Rhipiphori*. Ann. Nat. Hist. Ser. 1, v.

J. Palm. Contributions to the Diptera-fauna of Tyrol. Trans. Zool. Bot. Soc. Vienna, xix.

F. P. Pascoe. Contributions to the knowledge of *Curculionidæ*. Journ. Linn. Soc. Zool. x.

——. Additions to the *Tenebrionidæ* of Australia. Ann. Nat. Hist. Ser. 4, v.

J. E. Planchon and J. Lichtenstein. On *Phylloxera*, the new disease attacking the vine. 8vo. Presented by the Authors.

T. Reakirt. New species of Diurnal Lepidoptera. Proc. Acad. Nat. Sc. Philad. 1868.

A. S. Ritchie. On the Coleoptera of the island of Montreal.—Notes on *Pieris Rapæ*. Canadian Naturalist, New Ser. iv.

A. Rogenhofer. On Hermaphrodites in *Rhodocera*.—Lepidopterological communications. Trans. Zool. Bot. Soc. Vienna, 1869.

J. R. Schiner. *Alophora Kriechbaumeri*, a new Phasia from Tyrol. Trans. Zool. Bot. Soc. Vienna, 1869.

L. E. Schulze. On cuticular formations and the induration of epithelium-cells in Articulate Animals, 2 plates. Archiv mikrosk. Anat. v.

D. Sharp. On the species of *Philhydrus* found in the Atlantic islands. Ann. Nat. Hist. Ser. 4, v.

C. Th. v. Siebold. On parthenogenesis in *Polistes gallica*.—On pædogenesis in the *Strepsiptera*. Zeitschr. wiss. Zool. xx.

F. Smith. On the parasitism of *Rhipiphorus paradoxus*. Ann. Nat. Hist. Ser. 4, iv. v.

H. T. Stainton. The *Tineina* of Southern Europe, 1 vol. Presented by the Author.

C. Stål. New or little-known *Bryozoa*:—Hemiptera Africana, I. to IV., 1 plate.—Contributions to the knowledge of *Reduviidæ*.—Contributions to the systematics of Hemiptera.—Synopsis of the *Saldæ* of Sweden,—of the *Hydrobatidæ* of Sweden. Proc. R. Acad. Sc. Stockh. xxii. to xxv.

G. Stierlin and V. v. Gautard. The Coleopterous Fauna of Switzerland. Mem. Helv. Soc. Sc. Zurich, xxiii.

C. G. Thomson. Entomological Observations made in a tour in Scania in 1866, with descriptions of new species. Proc. R. Acad. Sc. Stockh. xxiv.

J. Watson. Further remarks on the plumules or battledore-scales of some of the Lepidoptera. Monthl. Microsc. Journ. ii.

J. Winnertz. Seven new species of *Sciara*. Trans. Zool. Bot. Soc. Vienna, xix.

H. Wegenbergh, jun. Two new Diptera, 1 plate. Arch. Néerl. Sc. Ex. et Nat. Haarlem, iv.

T. V. Wollaston. The Coleoptera of St. Helena.—Additions to the Coleopterous fauna of the Cape-Verd Islands. Ann. Nat. Hist. Ser. 4, v.

Horæ Societatis Entomologicæ Rossicæ, 6 parts. Entomological Society's Transactions, 1870, part 1. Entomologists' Monthly Magazine to May 1870.

Lower Animals :—

A. Agassiz. Preliminary Report on *Echini* and Starfishes dredged in deep water between Cuba and the Florida Reef by L. F. de Pourtales. Bull. Mus. Comp. Zool. Harv. Coll. 9.

L. Agassiz. Report upon deep-sea dredgings in the Gulf-stream during the third cruise of the U.S. steamer 'Bibb.' Bull. Mus. Comp. Zool. Harv. Coll. 13.

E. J. Allman. On *Rhabdopleura*, a new genus of *Polyzoa*. Proc. R. Soc. Edinb. 1868–69.

Note on *Polytrema miniaceum*. Ann. Nat. Hist. Ser. 4, v.

W. Baird. New suctorian Annelida.—Further remarks on *Megascolex diffringens*. Proc. Zool. Soc. 1869.

J. S. Bowerbank. Monograph of siliceo-fibrous Sponges, 5 plates. —On Dr. Gray's genus *Theonella*. Proc. Zool. Soc. 1869.

H. J. Carter. Notes on the Sponges *Grayella*, *Osculina*, and *Cliona*. —On two new species of the Foraminiferous genus *Squamulina*, and on a new species of *Difflugia*, 2 plates. Ann. Nat. Hist. Ser. 4, v.

W. B. Carpenter. On the separation of the species of *Echinida*, 1 plate. Monthly Microsc. Journ. iii.

E. Claparède. Histological researches on *Lumbricus terrestris*, Linn., 6 plates. Zeitschr. wiss. Zool. xix.

C. Cubitt. Observations on some points of the economy of *Stephanoceros*, 1 plate. Monthly Microsc. Journ. iii.

V. Czerny. Observations on *Amœbas*. Archiv mikrosk. Anat. v.

M. Duncan. On the *Madreporaria* dredged up in the Expedition of H.M.S. 'Porcupine.' Proc. R. Soc. xviii., and Ann. Nat. Hist. Ser. 4, v.

Duplessis and Combe. On the accidental injection of the gastro-vascular system in *Clepsine complanata*, 1 plate. Bull. Soc. Vaud. Sc. Nat. x.

E. Eisig. Description of a *Filaria* from *Halmaturus*.—*Nereis hircinicola*, 1 plate. Zeitschr. wiss. Zool. xx.

F. A. Forel. Introduction to the study of the deep-water fauna of Lake Leman. Bull. Soc. Vaud. Sc. Nat. x.

— Fürstenberg. On the Miescher's, or Prosospermum-channels, woodcuts. Trans. Nat. Hist. Un. Pomer. i.

J. E. Gray. Note on *Myriosteon Higginsii*. Ann. Nat. Hist. Ser. 4, v.

A. Greef. On freshwater Radiolaria and Radiolaria-like *Rhizopoda*, 2 plates. Archiv mikrosk. Anat. v.

——. *Protohydra Leuckartii*, a new race-form of *Cœlenterata*, 2 plates. Zeitschr. wiss. Zool, xx.

H. Grenacker. Some observations on *Rotatoria*, 1 plate. Zeitschr. wiss. Zool. xix.

——. On *Actinophrys Sol* (*Radiolaria*). Trans. Phys. Med. Soc. Würzb. New Ser. i.

E. Grube. On the Annelid fauna of St. Vaast (Brittany). Trans. Siles. Soc. Nat. Hist. 1868–69.

E. Hæckel. On Crambessida, a new family of Medusæ of the group of Rhizotoms, 2 plates. Zeitschr. wiss. Zool. xix.

——. On the Organization of Sponges and their relationship to the Corals.—Prodromus of a system of Calcareous Sponges (both papers from the 'Jenaische Zeitschr.'). Ann. Nat. Hist. Ser. 4, v.

J. A. Herklots. Echinoderms figured from Nature, from the drawings of the Royal Museum of Leyden, 10 plates. Bijdr. Dierk. R. Soc. Zool. Amsterdam, 9.

F. Hincks. On some interesting points in the history of Polyzoa. Pop. Sci. Rev. ix.

J. Hogg. On *Cercariæ* parasites on *Lymnæa stagnalis*, 1 plate. Monthl. Microsc. Journ. iii.

J. G. Jeffreys. Last Report on Dredging among the Shetland Islands. Separate copy presented by the Author.

M. Johnson. The polymorphic character of the products of development of *Monas Lens*. Journ. Quek. Microsc. Club, iii.

J. G. H. Kinberg. New Annelida. Proc. R. Acad. Sc. Stockh. xxii., xxiii.—On the regeneration of the head and anterior segments of an Annelid. Ibid. xxiv.

W. S. Kent. On a new genus of *Madreporaria*, or Stony Corals. —On the relationship of the Sponges to the Corals.—On a new *Sagitta* from the S. Pacific. Ann. Nat. Hist. Ser. 4, v.

——. On the calcareous spiculæ of the Gorgonaceæ, 2 plates. Monthly Microsc. Journ. iii.

— Knoch. On the embryology of *Bothriocephalus latus*. Bull. Imp. Acad. Petersb. xiv.

A. Kölliker. Anatomico-systematical description of *Alcyonaria*. Trans. Senckenb. Soc. Nat. Francf. vii.

A. Krohn. On the earliest formation of the stems of *Botryllus*, 1 plate. Wiegm. Archiv, xxxv.

J. Leidy. On some American Leeches. Proc. Acad. Nat. Sc. Philad. 1868.

S. Lovén. On *Phanogenia*, a new genus of free *Crinoidea*. Proc. R. Acad. Stockh. xxiii.—On *Leskia mirabilis*, Gray. Ibid. xxiv.—On a remarkable species of *Spongia* living in the N. Sea, 1 plate. Ibid. xxv. Also a separate copy, presented.

T. Lyman. Preliminary report on Ophiuridæ and Astrophytidæ dredged in deep water between Cuba and the Florida reef by L. F. de Pourtales. Bull. Mus. Comp. Zool. Harv. Coll.

W. C. MacIntosh. On the style-region of the Ommatoplean proboscis, 1 plate. Monthl. Microsc. Journ. iii.

——. On the structure of British Nemerteans and some new British Annelids, 13 plates. Trans. R. Soc. Edinb. xxv.

A. J. Malmgren. Northern marine Annelids, 12 plates. Proc. R. Acad. Sc. Stockh. xxii. The polychætous Annelids of Spitzberg, Greenland, Iceland, and Scandinavia hitherto known, 14 plates. Ibid. xxiv.

E. Metschnikoff. Researches on the metamorphoses of some Marine Animals. Zeitschr. wiss. Zool. xx., and Proc. R. Soc. Sc. Göttingen (Nachrichten), 1869.

——. Embryological researches on *Gyrodactylus*. Bull. Imp. Acad. Sc. Petersb. xiv.

H. Nitsche. Contributions to the knowledge of *Bryozoa*, 3 plates. Zeitschr. wiss. Zool. xx.

E. Parfitt. On spontaneous generation.—On the *Protozoa* of Devonshire. Trans. Dev. Assoc. Sc. Lit. and Art, iii.

——. Experiments on spontaneous generation, 1 plate. Monthl. Microsc. Journ. ii.

G. Pouchet and A. Myèvre. On the anatomy of the *Alcyonaria* (from the Comptes Rendus). Ann. Nat. Hist. Ser. 4, v.

L. F. de Pourtales. List of the Crinoids obtained on the coasts of Florida and Cuba.—List of the Holothuridæ from the deep-sea dredgings of the U. S. coast-survey. Bull. Mus. Comp. Zool. Harv. Coll.

A. Quennerstedt. Notes on Animal Life in the Frozen Sea between Spitzberg and Greenland, 3 plates. Trans. R. Acad. Sc. Stockh. vii.

J. Reineke. On the sexual relations of *Saprolegnia monoica*, 1 plate. Archiv mikrosk. Anat. v.

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F. A. Smitt. On the development and gelatinous bodies of marine Bryozoa, 7 plates. Proc. R. Acad. Stockh. xxii.—Critical enumeration of the marine Bryozoa of Scandinavia. Ibid. xxii. 1 plate, xxiii. 11 plates, xxiv. 10 plates.—Enumeration of the marine Bryozoa of arctic and northern regions. Ibid. xxiv.

J. G. Tatem. Contributions to the teratology of Infusoria. Monthl. Microsc. Journ. iii.

T. Wyville Thomson. On *Holtenia*, a genus of vitreous sponges, 1 plate. Phil. Trans. R. Soc. clix.

C. S. Wade. The development of organisms in organic infusions. Monthl. Microsc. Journ. ii., iii.

J. F. Whiteaves. On some results obtained by dredging in Gaspé and off Murray Bay. Canad. Naturalist, New Ser. iv.

R. v. Willemoes-Suhm. Helminthological notes, n. s., 1 plate. Zeitschr. wiss. Zool. xx.

A. Wrzeniowski. Contributions to the Anatomy of Infusoria, 2 plates. Archiv mikrosk. Anat. v.

PHÆNOGAMIC BOTANY:—

N. J. Andersson. Monographia Salicum, 5 plates. Trans. R. Acad. Sc. Stockh. vi.

———. A new *Colpodium* from Spitzberg, 1 plate. Proc. R. Acad. Sc. Stockh. xxiii.

P. Ascherson. On *Bidens radiatus*. Bot. Zeit. 1870.

H. Baillon. Histoire des Plantes, i. and ii., parts 1–4. Purchased.

J. G. Baker. Monograph of British Roses. Journ. Linn. Soc. Bot. xi.

———. Review of the genus *Narcissus*. Seem. Journ. Bot. viii.

J. H. Balfour. On *Hieracium collinum*, new to Britain, 1 plate. Trans. Bot. Soc. Edinb. x.

O. Beccari. New Bornean plants, Balanophoreæ, 4 plates, Rafflesiaceæ. N. Giorn. Bot. Ital. i.—Aristolochieæ and allied genera, 3 plates.—Note on the embryo of Dioscoraceæ, 1 plate.—*Disepalum coronatum*, a new Bornean Anonacea, 1 plate. Ibid. ii.

J. Bell. The plants of the W. coast of Newfoundland. Canad. Naturalist, n. ser. iv.

A. Blytt. On the vegetation of Sognefiord in Norway, 8vo. Presented by the Royal University of Christiania.

O. Böckeler. The Cyperaceæ of the Royal Herbarium, Berlin. Linnæa, xxxvi.

M. H. Boquillon. Review of Verbenaceæ, 8vo, 20 plates. Presented by the Author.

M. Brauer. Enumeration of the plants collected on the Dnieper and the Lower Konka. Bull. Soc. Imp. Nat. Mosq. 1868, ii.

— de Brebisson. On the genus *Filago*. Bull. Soc. Linn. Norm. Ser. 2, ii.

A. Brongniart and A. Gris. On New-Caledonian Coniferæ. Bull. Soc. Bot. Fr. xvi.

R. Brown. The geographical distribution of Coniferæ and Gnetaceæ. Trans. Bot. Soc. Edinb. x.; and separate copy. Presented by the Author.

L. Buchenau. On the Alismaceæ, Junceæ, and allied orders collected by the brothers Schlagintweit in Upper Asia. Proc. (Nachrichten) R. Soc. Sc. Göttingen, 1869.

De Candolle. Prodromus, xvi. 1. Purchased.

T. Caruel. Conspectus of Italian Junci.—Of Italian Valerianeæ. —Note on *Veronica longistyla*. N. Giorn. Bot. Ital. i.

G. Casaretto. Notes on plants observed on the promontory of Portofino. N. Giorn. Bot. Ital. ii.

W. Colenso. On the Botany, geographic and economic, of the provinces of Nelson and Marlborough. Trans. N.-Zeal. Instit. i.

E. Cosson and Durieu de Maisonneuve. Exploration scientifique de l'Algérie, Botany, completion of vol. ii. Purchased.

F. Crépin. Prodromus of a monograph of Roses. Bull. Soc. R. Bot. Belg. viii.

R. O. Cunningham. Letter on the botany of the Straits of Magellan. Journ. Linn. Soc. Bot. xi.

F. Delpino. Monographic review of Marcgraviaceæ.—Short notes on the biological and genealogical relations of Marantaceæ. N. Giorn. Bot. Ital. i.

A. Dickson. On the development of the flower in *Pinguicula vulgaris*, and on the embryos of Lentibularieæ, 3 plates. Trans. R. Soc. Edinb. xxv.

A. T. Drummond. The introduced and spreading plants of Ontario and Quebec. Canad. Naturalist, New Ser. iv.

J. Duval-Jouve. On the priority of names of *Sporobolus pungens*. —On some French species of *Ægilops*. Bull. Soc. Bot. Fr. xvi.

A. Engler. Critical Index to the species and synonyms of *Saxifraga*. Trans. Zool. Bot. Soc. Vienna, xix.

T. B. Flower. Contributions towards a catalogue of the plants of Tenby. Presented by the Author.

T. Fourreau. Catalogue of the plants growing spontaneously along the course of the Rhone (concluded). Ann. Soc. Linn. Lyons, xvii.

E. Fries. Symbolæ ad synonymiam Hieraciorum. Proc. R. Acad. Sc. Stockh. xxiii.

P. Gennari. Florula of Caprera. N. Giorn. Bot. Ital. ii.

H. T. Hance. Fifth decade of Chinese plants.—Notes on *Quercus Wallichiana*, Lindl.—Four new Chinese Crassulaceæ. Seem. Journ. Bot. viii.

C. Hasskarl. On *Philydrum lanuginosum*, Br. Bull. Soc. Bot. Fr. xvi.

——. Commelinaceæ Indicæ, imprimis Archipelagi Indici. Presented by the Zoologico-Botanical Society of Vienna.

T. Hector. On the geographical Botany of New Zealand. Trans. N.-Zeal. Instit. i.

Hooker's Icones Plantarum, xi. part 3. Presented by the President.

— v. Jacobi. Addenda to his systematic arrangement of Agaves. Trans. Siles. Soc. Nat. Hist. 1868–69.

N. Kauffman. On the male flowers of *Casuarina quadrivalvis*, 1 plate. Bull. Soc. Imp. Nat. Mos. 1868, ii.

T. Kirk. Notes on plants observed during a visit to the north of Auckland.—On the botany of the Great Barrier island. Trans. N.-Zeal. Instit. i.

S. Kurz. Hypoxideæ Indicæ. Ann. Mus. Lugd. Bat. iv.

J. Lange. Review of the plants, either rare or new for the Danish Flora, collected in the years 1867 and 1868. Journ. Bot. Soc. Copenh. iii.

G. Lawson. The Canadian species of *Myosotis* and other Boragineæ;—of Ranunculaceæ. Canad. Naturalist, New Ser. iv.

W. Lauder-Lindsay. Notes on some plants from Otago, New Zealand. Seem. Journ. Bot. vii.

J. C. Lettsom. The Natural History of the Tea-tree, 4to, plates, 2nd edit. (1791). Presented by Mr. Hanbury.

P. Levy. On the Leaves of Nicaragua. Bull. Soc. Bot. Fr. xvi.

— Macoun. Plants new to Canada. Canad. Naturalist, New Ser. iv.

T. Meehan. Sexual law in *Acer dasycarpum*.—Variations in *Epigæa repens*.—Monœcism in *Luzula campestris*.—On the leaves of Coniferæ.—Dioicism of *Mitchella repens*.—Variations in *Taxodium* and *Pinus*.—On the seed-vessels of *Forsythia*. Proc. Acad. Nat. Sc. Philad. 1868.

J. Miers. Contributions to Botany, ii., 43 plates. Presented by the Author.

F. A. W. Miquel. Ecloge Rubiacearum Archipelagi Indici.—Enumeration of Violaceæ, chiefly from the Indian Archipelago.—On *Grammatophyllum Rumphianum*.—On Cinchonas cultivated in Java.—On some Urticeæ, 1 plate. Ann. Mus. Lugd. Bat. iv.

——. New Contributions to the knowledge of Cycadeæ, 2 plates.—On Japanese *Funckiæ*. Proc. R. Acad. Sc. Amsterd. Ser. 2, iii.; the latter paper also in Arch. Néerl. Sc. Exact. et Nat. iv.

Sir D. Monro. On the geographical Botany of the provinces of Nelson and Marlborough, compared with that of Canterbury. Trans. N.-Zeal. Instit. i.

C. Moore. Report on the vegetation of Lord Howe's Island. Presented by the Author.

F. Mueller. On *Acradenia*, Kipp. Proc. R. Soc. Tasmania, 1867.

A. Nielreich. Critical notes on the plants described in Schott's Analecta Botanica. Proc. Imp. Acad. Sc. Vienna, lviii.

——. Second supplement to the 'Flora of Lower Austria.' Trans. Zool. Bot. Soc. Vienna, xix.

F. v. Osten-Sacken and F. J. Ruprecht. Sertum Tianschanicum. Mem. Imp. Acad. Sc. Petersb. xiv.

C. A. J. A. Oudemans. On *Cycas inermis*, in reply to Miquel. Proc. R. Acad. Sc. Amsterd. Ser. 2, iii.

J. Paillot. Two new (critical) species of *Prunus*. Bull. Soc. Bot. Fr. xvi.

F. Parlatore. Flora Italiana, iv. part 2. Purchased.

G. A. Pasquale. Note on *Pachira glabra*;—on *Tetranthera caus-ticans*. N. Giorn. Bot. Ital. i.

V. Payot. On the vegetation of the snowy region of the Mont Blanc Mountains. Memb. Imp. Acad. Sc. Lyons, xvii.

R. A. Philippi. On a singular form of *Godetia Cavanillesii*, Spach. Bot. Zeit. 1870.

Pœppig and Endlicher. Nova Genera et Species Plantarum, folio, iii. Purchased.

E. Regel. Bromeliaceæ, from the botanical notes of the Garden of St. Petersburgh. Ann. Sc. Nat. Ser. 5, Bot. x.

J. A. Richter. On *Phragmites gigantea*. Bull. Soc. Bot. Fr. xvi.

P. Rohrbach. Synopsis of Lychnidæ. Linnæa, xxxvi.

——. On the structure of the flower in *Tropæolum*, 1 plate. Bot. Zeit. 1869.

F. Sandéen. On the origin and development of the embryo in Gramineæ, 2 plates. Trans. Univ. Lund, 1868.

W. W. Saunders. Refugium Botanicum, iii. parts 1, 2. Presented by the Author.

P. Savi. Note on *Bivonæa Saviana*, 1 plate. N. Giorn. Bot. Ital. i.

G. Schweinfurth. Sketches of the vegetation of Bahr-el-Gasal. Bot. Zeit. 1870.

A. Seemann. On *Godwinia gigas*, a new Aroidea from Nicaragua, 1 plate.—Two new species of *Vitis* from Central America.—A new *Oreopanax* from Nicaragua. Seem. Journ. Bot. vii.—*Phocea*, a new genus of Celastrineæ from New Caledonia.—Revision of Bignoniaceæ, continued. Ibid. viii.

T. P. Tournefort. Institutiones Rei Herbariæ, edit. 1700, 3 vols. 4to. Presented by Mr. Hanbury.

W. T. L. Travers. On the Flora of the provinces of Nelson and Marlborough, compared with that of Canterbury. Trans. N.-Zeal. Instit. i.

H. Trimen. On *Aira setacea*, Huds. Seem. Journ. Bot. vii.—*Callitriche truncata*, Guss., a British plant. Ibid. viii.

—— and W. T. Dyer. Flora of Middlesex, post 8vo. Presented by Mr. Hardwicke.

P. Van-Tieghem. Comparative Anatomy of the female flower and the fruit of Cycadeæ, Coniferæ, and Gnetaceæ, 4 plates. Ann. Sc. Nat. Ser. 5, Bot. x.

——. Anatomy of the female flower and fruit of the Walnut. Bull. Soc. Bot. Fr. xvi.

E. Warming. On the Uaranà, *Paullinia sorbilis*. Flora, 1869.

L. Warren. On Cheshire *Rubi*. Seem. Journ. Bot. vii.—On the *Dumetorum* group of British *Rubi*, 2 plates. Ibid. viii.

H. C. Watson. On the Thames-side *Brassica*. Seem. Journ. Bot. vii.

H. A. Weddell. Remarks on the generic name *Cascarilla*. Journ. Linn. Soc. Bot. xi.

E. Weiss. Contributions to the Flora of Greece and Crete. Trans. Zool. Soc. Vienna, xix.

F. Welwitsch. Sertum Angolense, 25 plates. Tr. Linn. Soc. xxvii.

A. Wesmael. On some Himalayan trees collected by Schlagintweit. Bull. Soc. R. Bot. Belg. viii.

A. Wood. Sketch of the Liliaceæ of Oregon and California. Proc. Acad. Nat. Sc. Philad. 1868.

——. On *Brevoortia*, 1 plate. Journ. Acad. Nat. Sc. Philad. vi.

M. Wretschko. On the development of the flower in Cruciferæ, 2 plates. Proc. Imp. Acad. Sc. Nat. Hist. lxviii.

— Zawadski. Enumeratio Plantarum Galiciæ et Bucovinæ, 1835. Purchased.

J. E. Zetterstedt. On the vegetation of the highland district of Småland. Trans. R. Acad. Sc. Stockh. New Ser. vi.

PHYSIOLOGICAL AND MISCELLANEOUS BOTANY:—

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T. Anderson. On the cultivation of *Cinchona* in Bengal. Trans. Bot. Soc. Edinb. x.

G. Arcangeli. On some regular forms of vegetable cells. N. Giorn. Bot. Ital. i.

E. Askenasy. On the influence of the medium of growth on the forms of plants, 2 plates. Bot. Zeit. 1870.

C. Bailey. On pollen considered as an aid in the differentiation of species. Monthl. Microsc. Journ. iii.

A. Batalin. On the fecundation of *Sayina nodosa*, *Mimulus guttatus*, and *Syringa vulgaris*. Bot. Zeit. 1870.

E. Borscow. On the reticulated parenchym-cells in the bark of *Ceropegia aphylla*, and their relation to the milky-juice vessels, 1 plate. Pringsh. Jahrb. vii.

— Boussaingault. On the functions of leaves. Ann. Sc. Nat. Ser 5, Bot. x.

T. Broughton. On a certain excretion of carbonic acid by living plants. Phil. Trans. R. Soc. clix.

A. de Candolle. Laws of Botanical Nomenclature, translated into Italian. N. Giorn. Bot. Ital. ii.

T. Caruel. On the gymnospermy of Coniferæ.—On the woolly

attachment of the seeds of *Luzula*.—Structure of leaves in *Passerina hirsuta*. N. Giorn. Bot. Ital. i.—On some matters observed in *Trapa natans*. Ibid. iii.

E. Cave. On the structure and development of the Fruit, 4 plates. Ann. Sc. Nat. Ser. 5, Bot. x.

H. Christ. On the origin of the Jura Flora. Bull. Soc. Bot. Fr. xvi.

H. Cleghorn. On the botany and agriculture of Malta and Sicily. Trans. Bot. Soc. Edinb. x.; also a separate copy. Presented by the Author.

K. Czeck. On the functions of stomata. Bot. Zeit. 1869.

T. Delpino. On the mutual influence of Plants and Animals in geographical distribution (from the Italian). Bot. Zeit. 1869.

———. On recently observed dichogamical arrangements. N. Giorn. Bot. Ital. ii.

P. Duchartre. An anomalous formation of internal adventive roots in *Œnanthe crocata*. Bull. Soc. Bot. Fr. xvi.

J. Duval-Jouve. On some tissues in *Juncus* and in Gramineæ, 1 plate. Bull. Soc. Bot. Fr. xvi.

— Germain de St. Pierre. On the dehiscence of Fruits.—On the distinction of rhizomes and roots. Bull. Soc. Bot. Fr. xvi.

— v. Gorkom. Report on Cinchona-culture for the third quarter of 1869. Flora, 1869.

A. Guillard. Note on the anatomical significance of the terms stem and root. Bull. Soc. Bot. Fr. xvi.

J. Hanstein. On the first development of the axial and foliary organs in phanerogamic plants.—On the growth of the roots of Phanerogams. Bot. Zeit. 1870.

C. Hasskarl. On Cinchona-cultivation in Java. Flora, 1869.

F. Hildebrand. On the floating leaves of *Marsilea*, and some other amphibious plants, 1 plate. Bot. Zeit. 1870.

T. v. Horen. Observations on the physiology of Lemnaceæ, 1 plate. Bull. R. Soc. Bot. Belg. viii.

E. Jardin. On the Surtabrandur of Iceland, its ancient forests, and the re-wooding of the island. Bull. Soc. Linn. Norm. Ser. 2, ii.

G. King. Notes on the famine food of Marwar. Trans. Bot. Soc. Edinb. x.

S. Kurz. Report on the vegetation of the Andaman Islands, map. Presented by the Author.

S. O. Lindberg. Observations in botanical morphology (*Aconitum, Monotropa, Trifolium, Oxalis*). Proc. R. Acad. Sc. Stockh. xxii.

C. Linsser. Researches on the periodical phenomena of life in plants. Mem. Imp. Acad. Sc. Petersb. xiii.

T. Meehan. On the sexual law in Coniferæ. Proc. Acad. Nat. Sc. Philad. 1869.

C. B. Moens. Chemical researches on the bark of *Cinchona Calisaya*. Flora, 1869.

H. v. Mohl. A biological peculiarity of some species of *Cuscuta*. Bot. Zeit. 1870.

Fritz Müller. On the conversion of anthers into stigmas in *Begonia*, and other morphological notes. Bot. Zeit. 1870.

W. Ogle. On the fertilization of various plants by insects, 2 papers, 2 plates. Pop. Sc. Review, ix.

E. Pfitzer. Observations on graft-hybrids. Bot. Zeit. 1869.

E. Prillieux. On the influence of the intensity of coloured light on the quantity of gas disengaged by submerged plants. Ann. Sc. Nat. Ser. 5, Bot. x.

——. On the viridescence of etiolated plants. Bull. Soc. Bot. Fr. xvi.

N. W. P. Rauwenhoff. Phyto-physiological observations, 1 plate. Proc. R. Acad. Sc. Amsterd. Ser. 2, iii.

W. Robinson. Alpine flowers for English gardens, 1 vol., numerous illustrations. Presented by the Author.

R. de la Sagra. Description and cultivation of China grass (Ortie de la Chine), 1 vol. Presented by the Author.

R. H. C. C. Scheffer. On a montrosity in the fruit of *Papaver somniferum*, 1 plate. Proc. R. Acad. Sc. Amsterd. Ser. 2, iii.

T. Schlœsing. Comparative vegetation of Tobacco under a bell-glass and in the open air. Ann. Sc. Nat. Ser. 5, Bot. x.

T. Schrœder. On the period of vernation of *Acer platanoides*, 8 plates. Pringsh. Jahrb. vii.

N. Speschneff. On the downward curvature of roots. Bot. Zeit. 1870.

C. K. Sprengel. On the fertilization of flowers by Insects (Das entdeckte Geheimniss der Natur), 4to. 1793. Purchased.

J. L. Stewart. Notes of a botanical tour in Laddak or western Tibet. Trans. Bot. Soc. Edinb. x.

J. Tchistiakoff. On the development of the cuticle, its relation to the development of organs, and some of its physical properties, 2 plates (in Russian, with an abstract in German). Bull. Soc. Imp. Nat. Mosc. 1868, ii.

W. T. L. Travers. On hybridization with reference to variations in plants. Trans. N.-Zeal. Instit. i.

F. Unger. Further researches on the motion of sap in plants, 1 plate and woodcuts. Proc. Imp. Acad. Sc. Vienna, lviii.

A. Vogl. Contributions to the Anatomy of Plants (chiefly Cinchona-bark), 1 plate. Trans. Zool. Bot. Soc. Vienna, xix.

W. Woolls. Lecture on the progress of Botanical discovery in Australia. Presented by the Author.

Cryptogamic Botany:—

J. G. Agardh. On Laminarieæ (from Trans. Univers. Lund).—On the Laminarieæ of Spitzberg (from Trans. R. Acad. Sc. Stockh.), separate copies. Presented by the author.

F. Ardissone. Studies of Italian Algæ, 6 plates. N. Giorn. Bot. Ital. i.

T. Arnold. The Lichens of Frankish Jura. Flora, 1869.—Lichenological Fragments. Flora, 1870.—Lichenological Excursions in Tyrol. Trans. Zool. Bot. Soc. Vienna, xix.

E. Askenasy. On *Ectocarpus*, 1 plate. Bot. Zeit. 1869.

F. Baglietto. Note on *Endocarpon Guepini*, Delise, woodcuts. N. Giorn. Bot. Ital. ii.

O. G. Blomberg. On the Lichen vegetation of Kinnehulle, with one new species. Proc. R. Acad. Sc. Stockh. xxiv.

M. H. Bocquillon. Anatomy and physiology of the reproductive organs of Fungi and Lichens, 4to, 2 plates. Presented by the author.

E. Borscow. On the discharge of Ammonia by Fungi. Bull. Imp. Acad. Sc. Petersb. xiv.

E. Boudier. On the Ascoboli, 8 plates. Ann. Sc. Nat. Ser. 5, Bot. x.

R. Braithwaite. On the geographical distribution of Mosses (after Dr. Schimper). Journ. Quek. Microsc. Club, ii.

J. S. D. Branth and E. Rostrup. Lichenes Daniæ. Journ. Bot. Soc. Copenh. iii.

A. Braun. On a new *Isoëtes* from New Zealand. Proc. R. Acad. Sc. Berlin, 1869.

A. Braun and C. Bouché. Reformed nomenclature of *Selaginellæ* now cultivated, or which have been cultivated in gardens. Ann. Sc. Nat. Ser. 5, Bot. x.

A. de Brébisson. Notes on French Diatomaceæ. Journ. Quek. Microsc. Club, ii.

O. Brefeld. *Dictyostelium mucoroides*, a new organism related to Hymenomycetes, 3 plates. Trans. Senkenb. Soc. Nat. Frankf. vii.

O. Brefeld. History of the development of *Empusa muscæ* and *E. radicans*. Bot. Zeit. 1870.

L. Caldesi. *Lenzites faventina*, Cald. N. Giorn. Bot. Ital. i.

B. Carrington. Two new British Hepaticæ. Seem. Journ. Bot. viii.

H. J. Carter. On the development of *Sorastrum spinulosum*, Näg., and description of a new *Protococcus*, 1 plate. Ann. Nat. Hist. Ser. 4, iv.

P. T. Cleve. Diatomaceæ from Spitzberg, 2 plates. Proc. R. Acad. Sc. Stockh. xxiv.—Swedish and Norwegian Diatomaceæ. Ibid. xxv.

A. Coigneaux. Analytical tables of Belgian pleurocarpic Mosses, without the aid of the organs of fructification. Bull. R. Bot. Soc. Belg. viii.

M. C. Cooke. On microscopic Moulds, 2 plates. Journ. Quek. Microsc. Club, ii.

J. M. Crombie. Lichenes Britannici, 1 vol. Presented by the Author.

— Dickie. On *Grimmia contorta* new to Britain.—On Diatomaceæ from Danish Greenland.—On the range in depth of Marine Algæ. Trans. Bot. Soc. Edinb. x.

P. Duchartre. Observations on the turning of Fungi (from the Comptes Rendus). Ann. Nat. Hist. Ser. 4, v.

A. M. Edwards. Notes on Diatomaceæ. Monthl. Microsc. Journ. iii.

J. H. L. Flögel. On optical appearances in Diatomaceæ. Bot. Zeit. 1869.

E. Fournier. On Mexican Ferns.—Two new species of *Pellæa*. —On New-Caledonian Ferns. Bull. Soc. Bot. Fr. xvi.

J. M. Fries. The Lichens of Spitzberg. Trans. R. Acad. Sc. Stockh. vii.

E. Fries. The Edible and Poisonous Fungi of Sweden, parts 7 to 10, plates 54 to 93. Presented by the Royal Academy of Sciences of Sweden.

L. Fuchs. The fructification of *Rhizomorpha*. Bot. Zeit. 1870.

V. Graber. On the proventriculus and ventricular appendages in Grasshoppers and Locusts, 3 plates. Proc. Imp. Acad. Sc. Vienna, lix.

E. Hampe. Critical notes on the Mosses of Planchon and Triana's Synopsis Floræ Novæ Granadæ. Bot. Zeit. 1869.—Mosses of Natal, collected by the Rev. Borgen.—New Mosses from Mexico, in Sonder's Herbarium. Ibid. 1870.

——. New Mexican Mosses. Trans. Zool. Bot. Soc. Vienna, xix.

P. J. Hellbom. Lichenological observations made in a tour in Lapland in 1864. Proc. R. Acad. Sc. Stockh. xxii.—Lichenological observations made in Nerike in 1866. Ibid. xxiii.—The rarer species of Lichens found in Nericia. Ibid. xxiv.

F. Hildebrand. On Marsilea. Flora, 1870.

G. Inzenga. Second century of new Sicilian Fungi, 2 plates. Giorn. Istit. Tecn. Palermo, v.

H. Karsten. On *Exobasidium*, Woron. Ann. Nat. Hist. Ser. 4, iv.

C. Knight. Notes on the Stictei of the Kew Museum. Journ. Linn. Soc. Bot. xi.

L. Kny. On the structure and development of antheridia in Ferns (from Proc. R. Acad. Sc. Berlin), 1 plate. Ann. Nat. Hist. Ser. 4, v.

A. v. Krempelhuber. History and literature of Lichenology to the close of 1865, vol. ii. Purchased.

——. On the Lichen Flora of Spain. Flora, 1869.

M. Kuhn. Filices of the Indian Archipelago. Ann. Mus. Lugd. Bat. iv.

——. The Ferns of the New Hebrides. Trans. Zool. Bot. Soc. Vienna, xix.

W. Lauder-Lindsay. Observations on new Lichenicolous Micro-fungi, 2 plates. Trans. R. Soc. Edinb. xxv.

——. The Lichen Flora of Greenland.—On colour-reaction as a specific character in Lichens. Trans. Bot. Soc. Edinb. x.

W. A. Leighton. Notulæ Lichenologicæ (continued). Ann. Nat. Hist. Ser. 4, v.

H. Leitgeb. Development of the antheridia in *Fontinalis antipyretica*, 3 plates. Proc. Imp. Acad. Sc. Vienna, lviii.

——. New Saprolegnieæ. Pringsh. Jahrb. vii.

S. A. Lindberg. Enumeration of the Mosses collected in the Spitzberg expeditions of 1858 and 1861. Proc. R. Acad. Sc. Stockh. xxiii.

H. Lojka. Report on a Lichenological tour in North Hungary. Trans. Zool. Bot. Soc. Vienna, xix.

R. L. Maddox. On the cultivation &c. of microscopic Fungi. Monthl. Microsc. Journ. iii.

P. Magnus. On the morphology of *Naias*. Bot. Zeit. 1869.

G. v. Martens. Third list of Bengalese Algæ. Proc. Asiat. Soc. Bengal, 1870.

G. Mettenius. Ferns of the Indian Archipelago. Ann. Mus. Lugd. Bat. iv.

J. Milde. Two new Mosses. Bot. Zeit. 1869.—On *Metzleria alpina*.—On erratic Mosses. Ibid. 1870.

J. Milde. Monograph of *Botrychia*, 3 plates. Trans. Zool. Bot. Soc. Vienna, xix.

A. Millardet. On the male prothallium of vascular Cryptogams. Ann. Nat. Hist. Ser. 4, v.

C. Müller. *Splachnobryum*, a new genus of Splachnaceæ. Trans. Zool. Bot. Soc. Vienna, xix.

G. de Notaris. Synopsis (Epilogo) of Italian Bryology. Trans. R. Univ. Genoa, i.

W. Nylander. On reactions in Cetrarieæ and in *Alectoria*. Bot. Zeit. 1869.

——. Synopsis of the Lichens of New Caledonia.—Synoptical conspectus of Stictineæ.—The Angola Lichens of Dr. Welwitsch. Bull. Soc. Linn. Norm. Ser. 2, ii.

L. Piré. Review of the Belgian acrocarpic Mosses. Bull. R. Soc. Bot. Belg. viii.

N. Pringsheim. On the pairing of zoospores in *Pandorina* and *Eudorina*, 1 plate. Proc. R. Acad. Sc. Berlin, 1869, translated into Ann. Nat. Hist. Ser. 4, v.

G. Rivet. On the influence of a plantation of Barberries on the production of Rust in Cerealia. Bull. Soc. Bot. Fr. xvi.

S. Rosanoff. Observations on the functions and properties of the pigments of different Algæ. Mem. Soc. Imp. Sc. Nat. Cherbourg, xiii.

P. Savi. Researches on the fecundation of *Salvinia natans*, with observations by E. Marcucci, 2 plates. N. Giorn. Bot. Ital. i.

W. P. Schimper. Synonymy of the Mosses of the Linnean Herbarium. Journ. Linn. Soc. Bot. xi.

——. Synopsis Muscorum Europæorum, 8vo. Purchased.

Dr. Schröter. On *Synchytria*. Flora, 1870, and Bot. Zeit. 1870.

S. Schulzer v. Müggenburg. Remarks on the polymorphism of some Fungi. Trans. Zool. Bot. Soc. Vienna, xix.

J. Schumann. Contribution to the natural history of Diatoms. Trans. Zool. Bot. Soc. Vienna, xix.

W. G. Smith. *Peziza macrocalyx*, Riess., a new British Fungus, 2 plates. Seem. Journ. Bot. vii.—Clavis Agaricorum, 6 plates. Ibid. viii.

C. Stenhammer. Synonymy and history of parts 7 and 8 of the Lichenes Suecici exsiccati. Proc. R. Acad. Sc. Stockh. xxii.

J. Stenhouse. Chemical notes on certain Lichens. Proc. R. Soc. xviii.

E. Stitzenberger. Analytical key to Lecideæ (from the N. Act. Acad. Nat. Cur.). Ann. Nat. Hist. Ser. 4, v.

E. Strasburger. On the mechanism of fertilization in acrogenous Cryptogams. Ann. Sc. Nat. Ser. 5, Bot. x. Pringsh. Jahrb. vii. Ann. Nat. Hist. Ser. 4, v.

——. The sexual organs and fertilization in *Marchantia polymorpha*. Pringsh. Jahrb. vii.

A. Trécul. On the position of the Tracheæ in ferns. Ann. Sc. Nat. Ser. 5, Bot. x.

V. Trevesan. On the genus *Dimelœna*, Norm. N. Giorn. Bot. Ital. i.

G. Venturi. Bryological florula of the valley of Rabbi in the Trentino, with 2 new species. N. Giorn. Bot. Ital. ii.

C. S. Wake. The development of organisms in organic infusions. Monthl. Microsc. Journ. ii.

— Zanardini. Iconographia Phycologica Mediterraneo-Adriatica, ii. part 5. Purchased.

J. E. Zetterstedt. Some Mosses from New Holland. Proc. R. Acad. Sc. Stockh. xxiv.

——. The Moss vegetation of the Pyrenees in the neighbourhood of Luchon. Trans. R. Acad. Sc. Stockh. v.

Palæontology :—

W. H. Baily. Figures of characteristic British Fossils, part 2, 10 plates. Presented by the Author.

E. Billings. On the structure of Crinoidea, Cystidea, and Blastoidea, woodcuts. Canad. Naturalist, N. Ser. iv. and in Ann. Nat. Hist. Ser. 4, v.

J. Bosquet. Two new species of *Mathildea* from the Tertiary formation, 1 plate. Proc. R. Acad. Sc. Amsterd. Ser. 2, iii., and Arch. Néerl. Sc. Exact. et Nat. iv.

J. F. Brandt. On the genus *Dinotherium*. Mem. Imp. Acad. Sc. Petersb. xiv.

G. Busk. On the discovery at Sarawak, in Borneo, of the fossilized teeth of a Rhinoceros and of a cervine Ruminant. Proc. Zool. Soc. 1869.

W. B. Carpenter. On the shell-structure of *Fusulina*, $\frac{1}{2}$ plate. Monthl. Microsc. Journ. iii.

—— and H. Brady. Description of *Parkeria* and *Loftusia*, two gigantic types of arenaceous Foraminifera, 9 plates. Phil. Trans. R. Soc. clix.

W. Carruthers. On the structure of the stems of the arborescent Lycopodiaceæ of the Coal-measures, 1 plate. On the genera *Ulodendron*, *Bothrodendron*, and *Megaphytum*, 2 plates and woodcuts. Monthl. Microsc. Journ. ii. iii.

W. Carruthers. On fossil Cycadean stems from the Secondary rocks of Britain, 10 plates. Trans. Linn. Soc. xxvi.

E. Coemans. Note on Equisetaceæ. Seem. Journ. Bot. vii.

E. D. Cope. On a large Enaliosaurian from Kansas.—On some remains of extinct Cetacea.—Second contribution to the history of the Vertebrata of the miocene period of the United States.—Synopsis of the extinct Batrachia of North America.—On some cretaceous Reptilia. Proc. Acad. Nat. Sc. Philad. 1868.—Third contribution to the fauna of the miocene period of the United States.—Review of the species of Plethodontidæ and Desmognathidæ. Ibid. 1869.

G. Cotteau. On the genus *Asterostoma* belonging to the family Echinocorydeæ. Ann. Nat. Hist. Ser. 4, v.

E. Deslongchamps. Various papers on Teleosaurians and other palæontological subjects, 9 plates. Bull. Soc. Linn. Normandy, Ser. 2, i.

M. Duncan and H. M. Jenkins. On *Palæocoryne*, a genus of tubularine Hydrozoa from the carboniferous formation, 1 plate. Phil. Trans. R. Soc. clix.

E. v. Eichwald. The *Lethæa rossica* and its opponents. Bull. Soc. Imp. Nat. Mosc. 1868, ii.

F. Fuchs. On the Shell-fauna of the Vicentine Tertiary formation. Proc. Imp. Acad. Sc. Vienna, lviii.—Eocene Shells from the Government of Kherson in Russia. Ibid. lix.

G. G. Gemmellaro. Palæontological studies of the *Terebratula-janitor*-calcareous formations of Northern Sicily, 1 plate. Giorn. Istit. Tecn. Palermo, v.

E. Hæckel. On fossil Medusæ of the Jura period, 3 plates. Zeitschr. wiss. Zool. xix.

A. Hancock and T. Atthey. On an undescribed fossil Fish from the Newsham Coal-shale. Ann. Nat. Hist. Ser. 4, v.

—— ——. On the occurrence of *Loxomma Allmanni* in the Northumberland coal-field. Ann. Nat. Hist. Ser. 4, v.

A. Hancock and R. Howse. On *Janassa bituminosa*, Schloth., from the Marl-slate of Midderidge, 2 plates. Ann. Nat. Hist. Ser. 4, v.

O. Heer. On the fossil plants discovered in Spitzberg by A. D. Nordenskiold and C. W. Blomstrand. Proc. R. Acad. Sc. Stockh. xxiii.—Letter on the fossil plants of South America collected by H. Furuhjelm. Ibid. xxv.

——. Contributions to the Chalk flora, 11 plates. Mem. Helv. Soc. Nat. Sc. Zurich, xxiii.

O. Heer. Fossil plants collected by E. Whymper in North Greenland in 1867, 18 plates. Phil. Trans. R. Soc. clix.

T. R. Jones, W. K. Parker, and J. W. Kirkby. On the nomenclature of the Foraminifera, 1 plate. Ann. Nat. Hist. Ser. 4, iv.

J. G. H. Kinberg. On the skeleton of a Fox found at 10 to 15 feet depth at Marieberg, near Addevalla. Proc. R. Acad. Sc. Stockh. xxv.

T. Karrer. The miocene Foraminifera-fauna of Kosteg in the Banat, 5 plates. Proc. Imp. Acad. Sc. Vienna, lviii.

G. C. Laube. On *Ammonites Aon*, Münst., and its allies.—On some fossil Echinidæ from the Murray cliffs in South Australia, 1 plate. Proc. Imp. Acad. Sc. Vienna, lix.

J. Lea. Descriptions of Unionidæ from the lower Cretaceous formations of New Jersey. Proc. Acad. Nat. Sc. Philad. 1868.

J. Leidy. The extinct Mammalian Fauna of Dacota and Nebraska, with a synopsis of the Mammalian remains of North America, 30 plates. Journ. Acad. Nat. Sc. Philad. vii.—Numerous Palæontological papers. Proc. Acad. Nat. Sc. Philad. 1868 and 1869.

G. Lindström. Observations on *Zoantharia rugosa*, 2 plates. Proc. R. Acad. Sc. Stockh. xxii.—On two new Upper-Silurian Corals from Gothland, 1 plate. Ibid. xxv.

J. G. O. Linnarson. On some fossils found in the Eophyton sandstone of Lugnäs in Sweden, 3 plates. Presented by the Author.

P. de Loriol and V. Gilliéron. Palæontological and stratigraphical monograph of the Lower Urgonian stage of Langeron, 8 plates. Mem. Helv. Soc. Nat. Sc. Zurich, xxiii.

J. Lycett. On a byssiferous fossil *Trigonia*. Ann. Nat. Hist. Ser. 4, v.

A. Manzoni. On the pliocene Bryozoa of Italy, 2 plates. Proc. Imp. Acad. Sc. Vienna, lix.

Abbé Mare. On *Elephas primigenius*. Bull. Soc. Linn. Normandy, Ser. 2, i.

J. B. Meek and A. H. Worthen. On the structure and habits of palæozoic Crinoidea.—On some types of carboniferous Crinoidea and one Echinoidea. Proc. Acad. Nat. Sc. Philad. 1868.—Descriptions of new Crinoidea and Echinoidea from the carboniferous rocks of the Western States.—Remarks on Blastoidea, and descriptions of new species.—Descriptions of new carboniferous Fossils from the Western States. Ibid. 1869.

———. On palæozoic Crinoidea. Canad. Naturalist, N. Ser. iv.

A. Milne-Edwards and A. Grandidier. On *Æpyornis* (from the Comptes Rendus). Ann. Nat. Hist. Ser. 4, iv.

H. A. Nicholson. On the British species of *Didymograpsus*, 1 plate. Ann. Nat. Hist. Ser. 4, v.

G. W. Ormerod. On the *Hippopotamus major* said to have been found in Kent's Cavern. Trans. Devon. Assoc. Sc. Lit. and Art, iii.

R. Owen. Human and Equine remains from the cavern of Bruniquel, 4 plates.—Fossil remains of Equines from Central and South America, 2 plates. Phil. Trans. R. Soc. clix.

V. Payot. Palæontology of the neighbourhood of Mont Blanc. Ann. Sc. Phys. Soc. Imp. Agr. Lyons, Ser. 3. viii.

W. Pengelly. On the submerged forest at Blackpool, near Dartmouth.—On the alleged occurrence of *Hippopotamus major* and *Machærodus latidens* in Kent's Cavern. Trans. Dev. Assoc. Sc. Lit. and Art, iii.

A. E. Reuss. Palæontological studies on the older tertiary strata of the Alps (10 plates, not yet issued). Proc. Imp. Acad. Sc. Vienna, lviii.

— Schlumberger. Palæontological notes, 1 plate. Bull. Soc. Linn. Normandy, Ser. 2, 1.

H. G. Seeley. On *Ornithopsis*.—On *Zoocapsa dolichorhamphia*. Ann. Nat. Hist. Ser. 4, v.

R. Tate. Contributions to Jurassic palæontology. Ann. Nat. Hist. Ser. 4, iv.

W. C. Williamson. Contributions to the History of *Zamia Gigas*, 2 plates. Trans. Linn. Soc. xxvi.

T. C. Wintler. Two new fossil Tortoises. Archiv Néerl. Sc. Exact. et Nat. iv.

Palæontographical Society, vol. xxiii. for 1869. Purchased.

MISCELLANEOUS:—

L. Agassiz. Address delivered on the centenary anniversary of the birth of Alex. v. Humboldt. Presented by the Author.

W. Braubach. Religion, Moral, and Philosophy of the Darwinian doctrine of species. Presented by Mr. Darwin.

J. Collins. On India Rubber (from Journ. Soc. Arts). Separate copy presented by the Author.

E. D. Cope. On the origin of Genera. Proc. Acad. Nat. Sc. Philad. 1868.

J. M. Crombie. The geological relations of the Alpine Flora of Great Britain. Proc. R. Soc. xviii.

J. M. Dempsey. Our Ocean Highways. Presented by the Author.

A. Ernst. Amadeo Bonpland, a Biography read at the Society of Physical and Natural Sciences of Caraccas. Presented by the Author.

D. Hanbury. Historical notes on Manna (from the Pharmaceutical Journal). Presented by the Author.

K. B. Heller. Darwin and Darwinism. Presented by Mr. Darwin.

J. Hogg. Results of Spectral Analysis (from the Monthly Microscopical Journal). Presented by the Author.

G. Jæger. The Darwinian Theory. Presented by Mr. Darwin.

——. On Spontaneous Generation and Fertilization. Zeitschr. wiss. Zool. xix.

L. Jenyns. Address of the President at the opening meeting of the Bath Natural-History and Antiquarian Field-Club. Presented by the Author.

M. Johnson. Jottings by a student of Heterogeny. Monthl. Microsc. Journ. iii.

E. Lartet and H. Christy. Reliquiæ Aquitanicæ, part 10. Presented by the executors of the late H. Christy.

J. Lea. Notes on microscopical Crystals included in some Minerals. Presented by the Author.

E. J. Lowe. Natural Phenomena and Chronology of the Seasons. Presented by the Author.

E. Parfitt. On Spontaneous Generation. Trans. Devon. Assoc. Sc. Lit. and Art, iii.

H. v. Post. Observations on Animal and Vegetable Statistics. Proc. R. Acad. Sc. Stockh. xxiv.

A. Quadri. Notes on the Darwinian Theory. Presented by Mr. Darwin.

H. Schacht. The Microscope, edited by F. Currey. Presented by the Editor.

C. J. Sundevall. The Animals of Aristotle: Mammals, Birds, Reptiles, and Insects (in German, from the Swedish). Presented by the Author, with additions.

G. Tate. The Geology, Botany, and Zoology of the neighbourhood of Alnwick, map and 2 plates. Presented by the Author.

May 24th, 1870.

Anniversary Meeting.

George Bentham, Esq., President, in the Chair.

This day, the Anniversary of the birth of Linnæus, and the day appointed by the Charter for the Election of Council and Officers, the President opened the buisness of the Meeting with the following Address:—

GENTLEMEN,

THE Reports which have been read to you on the finances and statistics of the Society may not be quite so favourable as usual. The number of Fellows whose loss we have to deplore is about the average; but the new ones elected have been below the numbers of the last two or three years. There has also been a considerable diminution in our receipts; but the falling off has been chiefly in compositions, a larger number of our newly elected Fellows having preferred annual payments. This reduces for the moment the Society's income, although in the long run compositions are much more favourable to the Fellows themselves than to the Society. Some delay has taken place in the issue of our publications, owing chiefly to difficulties with the authors of some papers as to the correction of the press. There is a general anxiety to commence printing before the whole of a paper is written, which it is calculated may be done whilst the first sheets are going through the press, and without a final revision even of those sheets, which is reserved for the proof; the result has been that some papers have been almost rewritten at that stage, causing great delays and considerable expense, besides that the stoppage of any one paper once in the printer's hands stays the progress of all subsequent ones. The Council have therefore, on the report of a Committee specially charged to inquire into the printing-arrangements, adopted regulations by which they hope to obviate future delays, the main features of which are, that no paper shall be forwarded to the printers until the whole of it is complete, and that, while full provision is made for the due correction of errors, alterations of the text are discountenanced, and if they occasion an extra expenditure beyond the liberal allowance of 15*s*. per sheet, the excess shall be at the charge of the respective authors. Notwithstanding, however, the above-mentioned delays, we have now, since the commencement of the year, besides the usual Journals, issued two parts of the Transactions, one illustrated by twenty-five plates, the expense of which was, in great measure, defrayed by the liberality of the distinguished author of the paper it contained, Dr. Welwitsch; and for the other we have equally to convey our thanks to Mr. Carruthers for the ten plates illustrating his own paper. A third part is now complete, and will be ready for delivery in the course of a day or two, and two or three very important botanical papers are in hand for the next issue. We have also been able to devote the usual sums towards the maintenance and increase of our Library.

It had been my intention on the present occasion to carry on the sketches of the general progress of biological science which I had attempted in 1862, 1864, 1866, and 1868; but I have, from various causes, been unable to devote so much time as usual to the preparation of my Address, and feel obliged to confine myself to a few points connected with subjects of special interest to myself, which, within the last two or three years, have made considerable advances.

The most striking are, without doubt, the results obtained from the recent explorations of the deep-sea faunas, and from the investigation of the tertiary deposits of the arctic regions, which, although affecting two very different branches of natural science, I here couple together, as tending, both of them, to elucidate in a remarkable degree one of the most important among the disputed questions in biological history, the continuity of life through successive geological periods.

An excellent general sketch of the first discovery and progressive investigation of animal life at the bottom of the sea at great depths, up to the close of the season of 1868, is given by Dr. Carpenter in the Proceedings of the Royal Society, vol. xvii. n. 107, for Dec. 17, 1868. The results of the still more important expedition of the past year have as yet been only generally stated by Mr. Gwyn Jeffreys, in the numbers of 'Nature' for Dec. 2 and 9, 1869, and by Dr. Carpenter, in a lecture to the Royal Institution, published in the numbers of 'Scientific Opinion' for March 23 and 30 and April 6 and 13 of the present year; and further details, as to the Madreporaria, are given by Dr. Duncan in the Proceedings of the Royal Society, vol. xviii. no. 118, for March 24 of the present year; whilst, in North America, the chief conclusions to be drawn from these researches into the deep-sea fauna are clearly and concisely enumerated by Prof. Verrill, in the number of Silliman's Journal for January last; and some of the more detailed reports of the American explorations, by Louis and Alexander Agassiz and others, have been published in the Bulletin of the Museum of Comparative Zoology at Harvard College, nos. 6, 7, and 9 to 13. For the knowledge of the data furnished by the tertiary deposits of the arctic regions we are indebted almost exclusively to the acute observations and able elucidations of Prof. O. Heer, in his 'Flora Fossilis Arctica,' in his paper on the fossil plants collected by Mr. Whymper in North Greenland, published in the last part of the Philosophical Transactions for 1869, and in the as yet only short general sketch of the results of the Swedish Spitzbergen Expeditions, contained in the Genevese 'Bibliothèque Universelle, Archives Scientifiques,' for Dec. 1869.

It would be useless for me here to retrace, after Dr. Carpenter and Prof. Verrill, the outlines of the revolution which these marine discoveries have caused in the previously conceived theories, both as to the geographical distribution of marine animals, and the relative influences upon it of temperature and depth, and as to the actual temperature of the deep seas, or to enter into any details of the enormous additions thus made to our knowledge of the diversities of organic life; and it would be still further from my province to consider the geological conclusions to be drawn from them. My object is more especially to point out how these respective dips into the early history of marine animals and of terrestrial forests have afforded the strongest evidence we have yet obtained, that apparently unlimited permanency and total change can go on side by side, without requiring for the latter any general catastrophe that should preclude the former.

There was a time, as we learn, when our chalk-cliffs, now high and dry, were being formed at the bottom of the sea by the gradual growth and decay of Globigerinæ and the animals that fed on them —amongst others, for instance, *Rhizocrinus*, and *Terebratulina caput-serpentis*; and when, at a later period, the upheaval of the ground into an element where these animals could no longer live arrested their progress in that direction, they had already spread over an area sufficiently extensive for some part of their race to maintain itself undisturbed; and so, on from that time to the present day, by gradual dispersion or migration, in one direction or another, the same *Rhizocrinus* and *Terebratulina* have always been in possession of some genial locality, where they have continued from generation to generation, and still continue, with Globigerinæ and other animals, forming chalk at the bottom of the sea, unchanged in structural character, and rigidly conservative in habits and mode of life through the vast geological periods they have witnessed. So also there was a time when the hill-sides of Greenland and Spitzbergen, now enveloped in never-melting ice and snows, were, under a genial climate, clothed with forests, in which flourished *Taxodium distichum* (with *Sequoiæ*, *Magnoliæ*, and many others); and when at a later period these forests were destroyed by the general refrigeration, the Taxodium already occupied an area extensive enough to include some districts in which it could still live and propagate; and whatever vicissitudes it may have met with in some parts, or even in the whole, of its original area, it has, by gradual extension and migration, always found some spot where it has gone on and thriven, and continued its race from generation to generation down to the present day;

unchanged in character, and unmodified in its requirements. In both cases, the permanent animals of the deep-sea bottom and the permanent trees of the terrestrial forests have witnessed a more or less partial or complete change in the races amongst which they were commingled. Some of these primitive associates, not endowed with the same means of dispersion, and confined to their original areas, were extinguished by the geological or climatological changes, and replaced by other races amongst which the permanent ones had penetrated, or by new immigrants from other areas; others, again, had spread like the permanent ones, but were less fitted for the new conditions in which they had become placed, and in the course of successive generations have been gradually modified by the Darwinian process of natural selection, the survival of the fittest only among their descendants. If, in after times, the upheaved sea-bottom becomes again submerged, the frozen land becomes again suited for vegetation, they are again respectively covered with marine animals or vegetable life, derived from more or less adjacent regions, and more or less different from that which they originally supported, in proportion to the lapse of time and extent of physical changes which had intervened. Thus it is that we can perfectly agree with Dr. Duncan, that "this persistence (of type and species through ages, whilst their surroundings were changed over and over again) does not indicate that there have not been sufficient physical and biological changes during its lasting to alter the face of all things enough to give geologists the right of asserting the succession of several periods;" but we can, at the same time, feel that Dr. Carpenter is in one sense justified in the proposition, that we may be said to be still living in the Cretaceous period. The chalk formation has been going on over some part of the North Atlantic sea-bed, from its first commencement to the present day, in unbroken continuity and unchanged in character.

If once we admit as demonstrated the coexistence of indefinite permanency and of gradual or rapid change in different races in the same area, and under the same physical conditions, according to their constitutional idiosyncracies, and also that one and the same race may be permanent or more or less changing, according to local, climatological, or other physical conditions in which it may be placed, we have removed one of the great obstacles to the investigation of the history of races, the apparent want of uniformity in the laws which regulate the succession of forms. We may not only trace, with more confidence, such modifications of race through successive geological periods as Prof. Huxley has recently

exhibited to us in respect of the Horse, but we can understand more readily the absolute identity of certain species of plants inhabiting widely dissevered areas, of which the great majority of species are more or less different. One of the arguments brought forward against the community of origin of representative species in distant regions, such as temperate Europe and the Australian Alps, the Arctic Circle and Antartic America, the Eastern United States and Japan respectively—an argument which long appeared to me to have considerable weight—was this:—if disseverance and subsequent isolation result necessarily in a gradual modification by natural selection, how is it that when all are subjected to the same influences, the descendants of some races have become almost generically distinct in the two regions, whilst others are universally acknowledged as congeners, but specifically distinct, and others again are only slight varieties or have remained absolutely identical? To this we can now reply, with some confidence, that there is no more absolute uniformity in the results of natural selection than in any other of the phenomena of life. External influences act differently upon different constitutions. Were we to remove the whole flora and fauna of a country to a distant region, or, what comes to the same thing, change the external conditions of that flora and fauna, as to climate, physical influences, natural enemies, or other causes of destruction, means of protection, &c., we should now be taught to expect that some of the individual races would at once perish; others, more or less affected, might continue through several generations, but with decreasing vigour, and, in the course of years or ages, gradually die out, to be replaced by more vigorous neighbours or invaders. Others, again, might see amongst their numerous and ever varying offspring some few slightly modified, so as to be better suited for the new order of things; and experience has repeatedly shown that the change once begun may go on increasing through successive generations and a permanent representative species may be formed. And some few races might find themselves quite as happy and vigorous under their new circumstances as under the old, and might go on as before, unchanged and unchanging.

Taking into consideration the new lights that have been thrown upon these subjects by the above investigations and by the numerous observations called forth by the development of the great Darwinian theories, amongst which I may include a few points adverted to in a paper on Cassia which I laid before you last year, but which a press of matter has prevented our yet sending to press, it appears to me that, in plants at least, we may almost watch, as it were, the

process of specific change actually going on; or at least we may observe different races now living in different stages of progress, from the slight local variation to the distinct species and genus. As a first step we may take, for instance, those races which are regarded by the majority of botanists as very variable species, such as *Rubus fruticosus*, *Rosa canina*, *Zornia diphylla*, *Cassia mimosoides*, &c. We shall find in each some one form, which we call typical, generally prevalent over the greater part of the area of the race, whilst others, more or less aberrant, are more or less restricted to particular localities, the same varieties not occurring in disconnected stations with precisely the same combinations of character and in the same proportions; local and representative varieties and subspecies are being formed, but have not yet obtained sufficient advantages to prevent their being kept in check by their intercommunication (and, probably, cross-breeding) with their more robust type. The British Batologist or Rhodologist transported to the south of France or to Hungary will still find one, or perhaps two or three forms of Bramble and Dog-rose with which he is familiar; but if he wishes to discriminate the thirty or forty varieties or subspecies upon which he had spent so much labour and acuteness at home, he will find that he must recommence with a series of forms and combinations of characters quite new to him. The species is still the same; the varieties are changed. As examples of what we may call a second stage in the formation of species, we may adduce such plants as *Pelargonium australe* or *grossularoides* and *Nicotiana suaveolens* or *angustifolia*, to which I alluded in the above-mentioned paper on *Cassia*. Here we have one race, of no higher than specific grade in the ordinary acceptance of the term, inhabiting two countries which have long been widely dissevered (in the one case South Africa and Australia, in the other Chili and Australia), which, if originally introduced by accident from one country to the other, have been so at a time so remote as thoroughly to have acquired an indigenous character in both; in both they are widely spread and highly diversified; but amongst all their varieties one form only is identical in the two countries (*Pelargonium australe*, var. *erodioides*, and *P. grossularioides*, var. *anceps*; *Nicotiana suaveolens*, var. *angustifolia*, and *N. angustifolia*, var. *acuminata*), and that so comparatively a rare one that it may be regarded as being in the course of extinction; whilst all other varieties, some of them very numerous in individuals over extended areas, and all connected by nice gradations, diverge nevertheless in the two countries in different directions and with different combinations of characters, no two of them

growing in the two countries being at all connected but through the medium of that one which is still common to both. When that shall have expired, the distinct species may be considered established. A still further advance in specific change is exemplified in *Cassia* itself, in which I have shown that no less than eight or nine different modifications of type, sectional and subsectional, are common to South America, tropical Africa, and Australia, but without any specific or, at least, subspecific identity, except perhaps in a few cases where a more modern interchange may be presumed. The original common specific types are extinct, the species have risen into sections. Common types of a still higher order have disappeared in the case of Proteaceæ, an order so perfectly natural and so clearly defined that we cannot refrain from speculating on the community of origin of the African and of the Australian races, both exceedingly numerous and reducible to definite groups—large and small well-marked genera in both countries, and yet not a single genus common to the two; not only the species, but the genera themselves have become geographical. As in the case of the varieties of *Pelargonium* and *Nicotiana*, so in that of the species of *Cassia* and of the genera of Proteaceæ, it is not to be denied that precisely similar modifications of character are observed in the two countries; but these modifications are differently combined, the changes in the organs are differently correlated. In Asiatico-African *Chamæcristæ* a tendency to a particular change in the venation of the leaflet is accompanied by a certain change in the petiolar gland; in America the same change in the gland is correlated with a different alteration in the venation. In Australian Proteaceæ the glands of the torus are constantly deficient with a certain inflorescence (cones with imbricate scales) which is always accompanied by them in Africa.

In selecting the above instances for illustration of what we may, without much strain upon the imagination, suppose to be cases of progressive change in races, it is not that they are isolated cases or exceptionally appropriate; for innumerable similar ones might be adduced. In the course of the detailed examination I have had successively to make of the floras of Europe, N.W. America, Tropical America, Tropical Africa, China, and Australia, I have everywhere observed that community of general type, in regions now dissevered, is, when once varied, accompanied by more or less of divergence in more special characters in different directions in the different countries.

With regard to the succession of races which have undergone a

complete specific change through successive geological periods, we have not in plants, as far as I am aware, any such cases of "true linear types or forms which are intermediate between others because they stand in a direct genetic relation to them" as Professor Huxley appears to have made out in favour of the pedigree of the Horse in his last Anniversary Address to the Geological Society. And I may, in regard to plants, repeat with still greater emphasis his dictum, that "it is no easy matter to find clear and unmistakable evidence of filiation among fossil animals; for in order that such evidence should be quite satisfactory, it is necessary that we should be acquainted with all the most important features of the organization of the animals which are supposed to be thus related, and not merely with the fragments upon which the genera and species of the palæontologist are so often based." The difficulty is much greater in the case of fossil plants; for instead of bones, teeth, or shells, portions of internal or external skeletons, the parts preserved to us from the tertiary period are generally those least indicative of structural organization. Mr. Carruthers has recently (Geological Magazine, April and July 1869, and Journal of the Geological Society, August 1869) adduced satisfactory evidence of the close affinity of *Sigillaria* and the allied genera of the coal-period with the living Lycopodiaceæ, formerly suggested by Dr. Hooker; but, as he informs me, no connecting links, no specimens, indeed, of the whole Order, have as yet been found in any of the intermediate cretaceous or tertiary deposits. Among the latter, the presence of numerous vegetable types, to which we may plausibly refer as to the ancestors of living races, is established upon unimpeachable data; but I have been unable to find that a single case of authentic pedigree, as successively altered from the cretaceous through the abundant deposits of the eocene and miocene period to the living races, has been as yet as satisfactorily made out as that of the absolute identity of *Taxodium* and others above mentioned, although I feel very little doubt that such a one will yet be traced when our palæontologists shall have ceased to confound and reason alike upon the best-proved facts and the wildest guesses. Our late distinguished foreign Member, Professor Unger, whose loss we have had so recently to deplore, had indeed, shortly before his death, published, under the name of 'Geologie der europäischen Waldbäume, part 1. Laubhölzer,' no less than twelve tabular pedigrees of European forest races; but it seems to me that in this, as in another of the same eminent palæontologist's papers to which I shall presently have to refer, his speculations have been deduced much more freely from conjectures

than from facts. There is no doubt that the presence of closely allied representatives of our Beeches, Birches, Alders, Oaks, Limes, &c. in the tertiary deposits of Central and Southern Europe is fully proved by inflorescences and fruits as well as leaves; but how can we establish the successive changes of character in a race when we have only the inflorescence of one period, the fruit of another, and the leaf of a third? I do not find a single case in which all three have been found in more than one stage; and by far the great majority of these fossil species are established on the authority of detached leaves or fragments of leaves alone.

Now let us consider for a moment what place a leaf really holds in systematic botany. Would any experienced systematic botanist, however acute, on the sole examination of an unknown leaf, presume to determine, not only its natural order and genus, but its precise characters as an unpublished species? It is true that monographists have sometimes published new species founded on specimens without flower or fruit, which from collateral circumstances of habitat, collector's notes, general resemblance, &c. they had good reason to believe really belonged to the genus they were occupied with; but then they had the advantage of ascertaining the general *facies* derived from insertion, relative position, presence or absence of stipular appendages, &c., besides the data supplied by the branch itself. And with all these aids, even the elder De Candolle, than whom no botanist was more sagacious in judging of a genus from general aspect, proved to have been in several instances far wrong in the genus, and even Order, to which he had attributed species described from leaf-specimens only. Palæontologists, on the other hand, have, in the majority of these tertiary deposits, had nothing to work upon but detached leaves or fragments of leaves, exhibiting only outward form, venation, and, to a certain degree, epidermal structure, all of which characters may be referred to that class which Professor Flower, in his introductory lecture at the Royal College of Surgeons in February last, has so aptly designated as *adaptive*, in contradistinction to essential and fundamental characters. They may, when taken in conjunction with relative individual abundance, assist in forming a general idea of the aspect of vegetation, and thus give some clue to certain physical conditions of the country; but they alone can afford no indication of genetic affinity, or consequently of origin or successive geographical distribution.

Lesquereux, in speaking of cretaceous "species, or rather forms of leaves," observes, in a note to his paper on Fossil Plants from Nebraska (Silliman's Journal, vol. xlvi. July 1868, p. 103), that "it

is well understood that when the word *species* is used in an examination of fossil plants, it is not taken in its precise sense; for indeed no *species* can be established from leaves or mere fragments of leaves. But as palæontologists have to recognize these forms described and figured, to compare them and use them for reference, it is necessary to affix to them specific names, and therefore to consider them as species." But the investigators of the tertiary floras of Central and Southern Europe have acquired the habit, not only of neglecting this distinction and naming and treating these forms of leaves as species equivalent to those established on living plants, but of founding upon them theories which must fall to the ground if such specific determination proves inaccurate. Nothing can be more satisfactory than such determinations as that of *Podogonium*, for instance, which Professor Heer has succeeded in proving, by numerous specimens of leaves, fruits, and even flowers, some of them still attached to the branches, which I had myself the pleasure of inspecting last summer under the friendly guidance of the distinguished Professor himself. This genus of Cæsalpinieæ, from its evident affinity with *Peltogyne*, *Tamarindus*, and others now scattered over the warmer regions of America and Africa, and more sparingly in Asia, tells a tale of much significance as to the physico-geographical relations of the Swiss tertiary vegetation, confirmed as it is by some other, equally or almost equally convincing examples. But the case appears to me to be far different with the theory so vividly expounded by Professor Unger in 1861 in his Address entitled "Neu Holland in Europa." This theory, now generally admitted, seems to me to be established on some such reasoning as this:—There are in the tertiary deposits in Europe, and especially in the earlier ones, a number of leaves that look like those of Proteaceæ; Proteaceæ are a distinguishing feature in Australian vegetation; *ergo*, European vegetation had in those times much of an Australian type derived from a direct land communication with that distant region.

This conviction, that Proteaceæ belonging to Australian genera were numerous in Europe in eocene times, is indeed regarded by palæontologists as one of the best-proved of their facts. They enumerate nearly one hundred tertiary species, and most of them with such absolute confidence that it would seem the height of presumption for so inexperienced a palæontologist as myself to express any doubt on the subject. And yet, although the remains of the tertiary vegetation are far too scanty to assert that Proteaceæ did not form part of it, I have no hesitation in stating that I do not believe that

a single specimen has been found that a modern systematic botanist would admit to be Proteaceous unless it had been received from a country where Proteaceæ were otherwise known to exist. And, on other grounds, I should be most unwilling to believe that any of the great Australian branches of the Order ever reached Europe. As this is a statement requiring much more than mere assertion on my part, I shall beg to enter into some detail, commencing with a short summary of my grounds of disbelief in European tertiary Proteaceæ, and then examining into the supposed evidences of their existence.

The analysis and detailed descriptions I have had to make within the last few months of between five and six hundred Proteaceæ, and consequent investigation of their affinities and distribution, have shown that the Order as a whole is one of the most distinct and most clearly defined amongst Phanerogams. I do not know of a single plant intermediate in structure between that and the nearest allied Orders, which I cannot say of any other of the large Orders I have worked upon. There is, moreover, especially amongst the Nucamentaceæ, a remarkable definiteness in the majority of genera, without intermediate species, whilst the whole Order exhibits the greatest uniformity in some of its most essential characters, derived from the arrangement of the floral organs and the structure of the ovary and embryo, accompanied by a truly protean foliage. All this points, in my mind, to unity of origin, very great antiquity, and long isolation in early times. And the species themselves appear to be for the most part constitutionally endowed with what I designated in my last year's Address as individual durability rather than with rapidity of propagation. The Order may be divided into about five principal groups, more or less definite in character, but very different in geographical distribution. First, the Nucamentaceæ (from which I would exclude *Andripetalum* and *Guevina*), which we may suppose to be the most ancient, and perhaps the only one in existence when Proteaceæ inhabited some land in direct communication, either simultaneously or consecutively, with Extratropical Africa and Australia; for it is the only group now represented in the former. It is preeminently endowed with the characteristic definiteness and durability of the Order. It is very natural as a whole; it has about 250 species in eleven distinct African genera, and nearly 200 species in twelve equally distinct Australian genera, no single genus common to the two countries, and the species mostly abundant in individuals, in very restricted localities. In both countries it is chiefly confined to the south. Africa sends

only one or two species northward as far as Abyssinia. The Australian portion has extended to New Zealand, where it has left a single species, now quite differentiated from the Australian ones; very few species (not half a dozen) have reached Tropical Australia; and, if ever it extended further, no representatives have yet been discovered in America, Asia, or even in New Caledonia. The four remaining groups, constituting the Folliculares, must have all been formed since the isolation from Africa. 1. Banksieæ, two genera, with above 100 species, have the type of distribution of the Australian Nucamentaceæ, chiefly southern, local, and abundant in individuals, with three or four species penetrating into the tropics, but none beyond Australia. 2. Grevilleeæ, in which the genera are somewhat less definite and the distribution more extended, have above 300 species in about eight genera, of which the greater portion are still southern and local, but yet a considerable number are tropical, and a few extend to New Caledonia, although none beyond that. 3. Embothrieæ, with about twenty-five species in half a dozen genera, form part of that southern, chiefly mountain, flora which extends from Tasmania and Victoria to New Zealand, Antarctic and Chilian America, a flora which comprises many species which we might imagine to have spread from the northern hemisphere down the Andes to Antarctic America, and thence to New Zealand and Australia, whilst others may have extended in a contrary direction; and amongst these we may conjecturally include the Embothrieæ, which in America are not found further north than Chile; whilst in Australia, although chiefly from the southern and eastern mountains, two or three species are northern, and one or two more are found in New Caledonia, but none in the Indian archipelago, nor in Continental Asia. 4. We have lastly the tropical form of Proteaceæ, the Helicieæ, which are but a slight modification in two different directions (modifications either of the flower or of the fruit) of the *Grevillea* type, probably of a comparatively recent date, and, although now widely spread over South America and Asia, have nevertheless left representatives in the original *Grevillea*-regions of Australia. There are nearly 100 species in about eight genera, almost all tropical or subtropical; three small genera are exclusively Australian; *Helicia* itself is Asiatic, chiefly from the Archipelago, extending, in four species, to Tropical Australia, in one or two species to New Caledonia, in two or three northward to the mountains of Bengal and Sikkim, and in one species even to Japan. Two American genera, with about forty species, are represented in New Caledonia by one genuine species of

each and one of an allied genus or section, and in Tropical Australia by one species showing still the Australian connexion; and two small genera are, as far as hitherto known, exclusively American, and may have been there differentiated. No Heliciæ, nor indeed as already observed, any Folliculares, have hitherto been discovered in Africa. If, therefore, Proteaceæ have really ever extended to Europe, it would naturally be in this Helicioid group that we should seek for them. As far, however, as I can learn, among the supposed century of European Proteaceæ, there is only one which palæontologists refer to it, the *Helicia sotzkiana* of Ettingshausen, founded on a single leaf, which Ettingshausen himself admits to bear much resemblance to the leaves of about twenty genera in thirteen different families; and, upon much consideration, he thinks it rather more like an *Helicia* than any thing else, and therefore definitively names it as such—a decision in which it is difficult to concur.

In answer to the above negative considerations, which, after all, lead to presumption only, we are told that we have positive evidence of the existence of Proteaceæ in the miocene, and still more in the eocene formations of Europe, in leaves, fruits, and seeds. As none of these have been found attached to the branches, nor even in sufficiently abundant proximity to be matched with any thing like certainty, we must take the three separately. First, as to seeds, those referred by palæontologists to Proteaceæ are winged and samaroid, some of them probably real seeds, shaped, without doubt, like those of some *Hakeæ* and *Embothria*, but quite as much like those of several Coniferæ, or of certain genera of Meliaceæ, Sapindaceæ, and various other Dicotyledonous Orders, there being no evidence of internal structure, conformation of the embryo, &c., by which alone these several samaroid seeds can be distinguished. Moreover those figured by Ettingshausen in his paper entitled "Die Proteaceen der Vorwelt" (Proc. Imp. Acad. Sc. Vienna, lvii. 711, t. xxxi. f. 11, 12, 14, 15, and δ) have a venation of the wing very different from that of any Proteaceæ I have seen, and much more like that of a real samara of an ash. Next, as to fruits, the hard follicles or nuts of Proteaceæ are as remarkable for their durability as the capsules of so many Australian Myrtaceæ; and we should be led to expect that, where Proteaceous remains are abundant, they should include a fair proportion of fruits, as is the case with the Conifers, Leguminosæ, &c. which have been undoubtedly identified. These supposed Proteaceous fruits in the tertiary deposits, however, are exceedingly rare. The only ones I have seen figured are:—

1, a supposed *Embothrium*-fruit figured by Heer in his Tertiary flora of Switzerland, t. xcvii. f. 30, an outline impression, with a deficiency in the upper portion, and without indication of internal structure; if this deficiency were filled up, and the seeds inserted, as in the imaginary restoration, f. 31 (for which I see no warrant, and in which the seeds are in the wrong position), it would be something like, but to my eyes not much like, the follicle of an *Embothrium*, and quite as much like what Ettingshausen figures (t. xxxi. f. 5) as the veinless leaf of a *Lambertia*; and, 2, the supposed *Persoonia* and *Cenarrhenes* drupes figured by Ettingshausen (t. xxx.): the former, in the absence of all indication of structure, are quite as good, if not better, representations of young fruits of *Ilex*, *Myoporum*, and many others, as of *Persoonia*; and where, in figures *c* and *d* of the same plate recent (unripe) Persoonia fruits are inserted, for comparison with the fossil figures β, γ, and δ, it appears to me that in the latter the long point is the pedicel, and the short point the style, whilst in the former, on the contrary, the short point is the pedicel, and the long one the style. To suppose that fig. 5 of the same plant represents the fruit of a *Cenarrhenes*, which, as far as known, has always an obliquely globular drupe, requires indeed a great strain upon the imagination. I can find no other fossil Proteaceous fruit figured or described.

Lastly, with regard to leaves, necessarily the main stay of palæontologists, I must admit that there is a certain general *facies* in the foliage of this Order that enables us in most, but not in all cases to refer to it with tolerable accuracy leafy specimens known to have come from a Proteaceous country, even without flowers or fruit; but as to detached leaves, I do not know of a single one which, in outline or venation, is exclusively characteristic of the Order, or of any one of its genera. If we know the genus and section of a specimen, we may determine its species by the venation; and we may sometimes fairly guess at its genus if we know it to be Proteaceous; but that is all. Outline is remarkably variable in many species of *Grevillea* and others; and venation is not always constant even on the same individual. But then we are told, with the greatest confidence, that the structure of the stomata in these fossil leaves, as revealed by the microscope, proves them beyond all doubt to be Proteaceous. In reply to that, I can only refer to the highest authority on these curious organs, Hugo Mohl, who, in a very careful and elaborate memoir specially devoted to the stomata of Proteaceæ, has the following passage (Vermischte Schriften, p. 248):—"Striking as is the above-described structure of the

stomata in Proteaceæ, we should nevertheless not be justified in regarding this as a peculiarity of this family; for all the variations which we meet with in the structure of the stomata in Proteaceæ are also to be found in plants belonging to widely distant Orders."

From the above considerations, I cannot resist the opinion that all presumptive evidence is against European Proteaceæ, and that all direct evidence adduced in their favour has broken down upon cross-examination. And however much these eocene leaves may assume a general character, which may be more frequent in Australia (in Proteaceæ and other Orders) than elsewhere, all that this would prove would be, not any genetic affinity with Australian races, but some similarity of causes producing similarity of adaptive characters.

Another series of conclusions drawn by palæontologists from their recent discoveries, which appears to me to have been carried too far, relates to the region where a given species originated. The theory that every race (whether species or group of species derived from a single one) originated in a single individual, and consequently in one spot, from which it has gradually spread, is a necessary consequence of the adoption of Darwinian views; and when Mr. R. Brown ("On the Geographical Distribution of Conifers," Trans. Bot. Soc. Edinb. x. p. 195) sneers at my having qualified it as a perfect delusion, he must have totally misunderstood, or rather misread the passage he refers to in my last year's Address. The expression is there specially applied to the idea of general centres of creation whence the whole flora of a region has gradually spread, in contradistinction to the presumed origin of individual races in a single spot, which is there as distinctly admitted. The determination of where that spot is for any individual race, is a far more complicated question than either geographical botanists or palæontologists seem to suppose. "Every vegetable species," as well observed by Professor Heer, "has its separate history," and requires a very careful comparison of all the conclusions deducible as well from present distribution as from ancient remains. The very important fact that *Taxodium distichum*, *Sequoiæ*, *Magnoliæ*, *Salisburia*, &c. existed in Spitsberg in miocene times, so satisfactorily proved by Heer, shows that the vegetation of that country then comprised species and genera now characteristic of North America; but it appears to me that the only conclusion to be drawn (independently of climate and geology) is, that the area of these species and genera had extended continuously from the one country to the other, either at some one time, or during successive periods. The proposition that

"Spitsberg appears to have been the focus of distribution of *Taxodium distichum*," because an accidental preservation of its remains shows that it existed there in the lower miocene period, would require at least to be in some measure confirmed by a knowledge of the flora of the same and preceding periods over the remainder of its present area, the greater part of which flora, however, is totally annihilated and for ever concealed from us. The fact that *Pinus abies* existed in Spitsberg in miocene times, and that no trace of it has been found in the abundant tertiary remains of Central Europe is very instructive. It might show that that tree was of more recent introduction into the latter than the former country; but it cannot prove that it was not still earlier in some other region, whence it may have spread successively into both territories, still less that its course of dissemination was directly from Spitsberg over Northern and Central Europe. Moreover the determination of *Pinus abies* is not so convincing as that of the *Taxodium*, resting as it does, if I correctly understand Prof. Heer's expression, on detached seeds and leaves, with a few scales of one cone, and may require further confirmation.

In the above observations it is very far from my wish to detract from the great value of Professor Heer's researches. Interested as I have been in the investigation of the history of races of plants, I have deeply felt my general ignorance of palæontology, and consequent want of means of checking any conclusions I may have drawn from present vegetation by any knowledge of that which preceded it, and the impossibility at my time of life of entering into any detailed course of study of fossils. Like many other recent botanists, I am obliged to avail myself of the general results of the labours of palæontologists; and if I have here ventured on a few criticisms, it is only as a justification of the hope that they may in some measure distinguish proved facts from vague guesses, in order that we may know how far reliance is to be placed on their conclusions.

Spontaneous generation, or Heterogeny, is a question which continues to excite much interest. It has been the subject of detailed memoirs, of violent controversies, and of popular articles in this country, and still more on the Continent; but the solution of the problems still involved in doubt does not seem to me to have much advanced since I alluded to the opposing theories of Pasteur and Pouchet in my Address of 1863. The present state of the case appears to me to be this: in the higher Orders of Animals every individual is known to proceed from a similar parent after sexual pairing; in most plants, and some of the lower animals, besides the

result of that sexual pairing which they all are endowed with, reproduction from the parent may take place by the separation of buds, by division, or sometimes by parthenogenesis; in some of the lower Cryptogams, the first stage in which the new beings are separated from the parent is that of spores termed agamic, from the belief that they never require previous sexual pairing, although the range of these agamic races is being gradually restricted, a remarkable advance having been recently made in this direction by Pringsheim in his paper on the pairing of the Zoospores in *Pandorina* and *Eudorina*. In all the above cases, in all organized beings which in their earliest stages are appreciable through our instruments, every individual has been proved to have proceeded in some stage or another from a similarly organized parent. But there are cases where living beings, Vibrios, Bacteria, &c., first appear under the microscope in a fully formed state, in decaying organic substances in which no presence of a parent could be detected or supposed. Three different theories have been put forward to account for their presence: 1st, that they are suddenly created out of nothing, or out of purely inorganic elements, which is perhaps the true meaning disguised under the name of spontaneous generation, a theory not susceptible of argument, and therefore rejected by most naturalists as absurd; 2ndly, that they are the result of the transformation of the particles of the organic substances in which they are found, without any action of parent Vibrios or Bacteria; and this appears to be what is specially termed Heterogeny; 3rdly, that there existed in these organic substances germs which had proceeded from parent Vibrios and Bacteria, but too minute for optical appreciation, and that their generation was therefore normal. The supporters of Heterogeny rely on the impossibility of accounting for the appearance of the Vibrios and Bacteriums in any other manner; for they say that although you treat the medium by heat in an hermetically closed vessel in such a manner as to destroy all germs, and intercept all access, still these beings appear. This their opponents deny, if the experiments are conducted with proper care. So it was seven years ago; and so it is still, although the experiments have been frequently repeated in this country, in France, and in North America, almost always with varying results. All reasoning by analogy is still in favour of reproduction from a parent; but Heterogeny has of late acquired partisans, especially in Germany, among those who are prepared to break down the barriers which separate living beings from inorganic bodies.

Brown's celebrated theory of the gymnospermy of Conifers and

allied Orders has been of late the subject of keen controversy. Objected to by Baillon, Parlatore, and others, it had been strongly supported by Caspary, Eichler, and, lastly, by Hooker in his important Memoir on *Welwitschia*, published in our Transactions in 1863. There the question seemed to rest till last year, when two detailed papers appeared, the one contesting, the other advocating the theory. The most elaborate is without doubt that of Gustav Sperk in the Memoirs of the Imperial Academy of Sciences of St. Petersburg. He gives a very fair *résumé* of all that had been published on the subject, and proceeds to record in detail his own observations on the structure and anatomy of the flower in a considerable number of Coniferæ, of *Ephedra alata*, *Gnetum latifolium*, and two species of *Cycas*, illustrated by well-executed analytical figures. He endeavours to prove, chiefly by their anatomy and development, that the coating which encloses the nucleus is carpellary, not ovular, of independent origin, always free, and often earlier developed than the nucleus,—that what is wanting in gymnosperms is not the ovarium or carpellary envelope, but the ovular coating,—that these plants are in fact gymnosperms in the sense of having naked nuclei and embryo-sacs, not naked ovules.

P. Van Tieghem, on the contrary, in the 'Annales des Sciences Naturelles,' ser. 5, vol. x., considers the gymnospermy of the ovules of Conifers to be proved by the anatomical structure of the organs on which they rest. He says that, as in normal Dicotyledons, the ovules are developed from, and continuous with, the margins of carpellary leaves, but these carpellary leaves are open, variously or imperfectly developed, and constitute solitary leaves on a secondary branch in the axil of the subtending bract, this secondary branch being arrested in its development, and the carpellary leaf facing the bract; the paper is illustrated by a large number of diagrams. These two Memoirs, published simultaneously at St. Petersburg and at Paris, contain of course no reference to each other. How far each author may or may not have proved his case, I cannot now take upon myself to inquire into. Neither of them appears to have had any knowledge of the views of Professor Oliver, who in his review of Hooker's Memoir on *Welwitschia* (Nat. Hist. Review, 1863) suggests the analogy of the disputed organ with the axial developments known under the name of floral disks. Both writers, however, confirm the anomalous structure of the flower in this great class of plants, and the position of the plants themselves in many respects intermediate between the higher Cryptogams and Dicotyledons, their connexion with the former being clearly shown by the

researches of Carruthers and other palæontologists, and with Dicotyledons through *Welwitschia* by Hooker in his above-mentioned Memoir.

Teratology is a subject which has again risen into importance as aiding in the history of the variations worked upon by natural selection in the formation of species. There had always been a tendency to attribute monsters and prodigies, whether in the organic or the inorganic world, to an infraction of the laws by which natural phenomena are regulated, by the immediate interposition *ad hoc* of a supreme will for temporary motives inscrutable to man, in which all that the man of science was called upon to do was to establish their authenticity, and detail their abnormities. This, however, was considered by D'Alembert sufficient to constitute Teratology as one of the great branches of Natural History taken in its most extended sense; for in his once celebrated 'Système Figuré des Connaissances Humaines,' *Histoire Naturelle* has three great branches:—*Uniformité de la Nature*, or the study of the laws which govern the organic or inorganic world, terrestrial and celestial; *Ecarts de la Nature*, the science of prodigies and monsters; and *Usages de la Nature*, or arts and manufactures. Jeremy Bentham, in his 'Essay on Nomenclature and Classification,' of which I published a French edition now nearly half a century since, strongly criticised such a classification, "by which a middle-sized man is placed in one niche, a tall man and a short man together in another"*. Mr. Galton, however, in his recently published interesting researches on Hereditary Genius, shows us, after Quetelet, that even in this respect the laws which govern the deviations from the average height of man, both above and below that average, are uniform under similar conditions, and may well be studied together. We may not, indeed, with D'Alembert, combine the history of animal and vegetable monstrosities with that of mineral monsters and celestial prodigies (whatever these may be); but the course which Biology has taken in the last few years has shown the necessity of accurately investigating in each branch all observed departures from what appears to be the ordinary course, before the real laws of that ordinary course can be ascertained. A work, therefore, in which these observed aberrations are carefully collected, tested, and methodized, cannot fail to be of great use to the physiologist; and such a work with regard to plants (the want of which, brought down to the present state of the science, I alluded to in my Address of 1864) has now been provided for us by Dr. Masters, in his 'Vegetable Teratology'—a work which we should especially

* Essay on Nomenclature and Classification, or *Chrestomathia*, part ii. 1817, p. 157; French edition, 1823, p. 48.

like to see deposited in local libraries at home and abroad, to which observers resident in the country could have ready access. Monstrosities or deviations from the ordinary forms in plants are comparatively rare and evanescent; they can be best observed in their fresh state, and often require watching in the course of their development. Country residents have the best means of doing so; and to them it is very important to have a systematic work at hand by which they can ascertain whether the aberration they have met with is one well known, or of frequent occurrence, or whether it presents any new feature, adding another item to our store of data, and therefore requiring closer observation and accurate record.

In making use, however, of Teratology in explanation of structure and affinities, great care is required. It is not every one who can handle these phenomena with the tact of a Darwin. In the course of my systematic labours I have met with several instances where teratologists have been led into conclusions which have proved to be far wide of the truth, owing to their having confined themselves to teratology to the neglect of homology and organogeny. This importance of teratological facts to the physiologist who is able duly to appreciate their bearing, and the discredit cast on their study owing to their misuse in hasty and incautious speculations, are alluded to in Dr. Masters's Introduction. But beyond some explanations of causes suggested by the bringing together series of facts showing a physiological connexion with each other and with more normal formations, he enters little into the various questions the solution of which has been more or less attempted by the aid of teratology. These questions, indeed, could not have been discussed without fully working out on each occasion normal organogeny, development, and homology, and thus leading him far beyond the object of the present work, which was to present to the future physiologist such a digested record of facts as should best show their relative bearing to each other, to normal conditions, and to any observed causes of disturbance. This object appears to have been well fulfilled, and the method adopted by the author probably the best suited to the purpose. A classification founded upon the nature of the causes inducing the several changes might, indeed, as he observes, have been theoretically the best, but is wholly impracticable until these causes shall have been satisfactorily ascertained. For the inquiry into these causes this teratological digest supplies a record of one class of facts, a necessary one, but only one of many classes on which it must be founded.

The Secretary reported that the following Members had died, or their deaths been ascertained, since the last Meeting:—

Fellows.

The Rev. John Barlow.
Edward William Brayley, Esq.
Gen. Sir W. M. G. Colebrooke.
Jonathan Couch, Esq.
John Hogg, Esq.
Sir William Charles Hood, M.D.
Peter Jones, Esq.
George Cranmer Kenrick, Esq.
Charles J. Meller, M.D.
Charles Prideaux, Esq.
Captain Charles Sturt.
James Veitch, Esq.
Joseph Walker, Esq.
James Lowe Wheeler, Esq.

Foreign Members.

Carl Gustav Carus, M.D.
Giuseppe Giacinto Moris, M.D.
Johann Evangelista Purkynje, M.D.
Michael Sars, Ph.D.
Franz Xavier Unger, M.D.

Associate.

John William Salter.

The Secretary also announced that nineteen Fellows and five Foreign Members had been elected since the last Anniversary.

At the Election which subsequently took place, George Bentham, Esq., was re-elected President; William Wilson Saunders, Esq., Treasurer; and Frederick Currey, Esq., and H. T. Stainton, Esq., Secretaries. The following five Fellows were elected into the Council, in the room of others going out, viz.:—Thomas Anderson, M.D., John Ball, Esq., Michael Foster, M.D., Henry Lee, Esq., Major F. J. S. Parry.

Mr. A. W. Bennett, on the part of the Auditors of the Treasurer's Accounts, read the Balance-sheet, by which it appeared that the total Receipts during the past year, including a Balance of £381 4*s.* 4*d.* carried from the preceding year, amounted to £1569 1*s.* 8*d.*, and that the total Expenditure during the same period (including the purchase of £100 Great Indian Peninsula Railway Debenture) amounted to £1318 12*s.* 1*d.*, leaving a Balance in the hands of the Bankers of £250 9*s.* 7*d.*

Receipts and Payments of the Linnean Society from May 1, 1869, *to April* 30, 1870.

	£	*s.*	*d.*
Balance in the hands of the Bankers at the last audit ...	381	4	4
Admission Fees 120 0 0			
Compositions 240 0 0			
Annual Contributions of £2 2*s.* 25 4 0			
Do. do. of £3 0*s.* 591 0 0			
Transactions, Journal, &c. sold 130 9 3			
Interest on Consols and other Investments 63 13 5			
Expenses of warming, lighting, tea, &c., repaid by other Societies 17 10 8			
	1187	17	4
	£1569	1	8

	£	*s.*	*d.*
Insurance	6	0	0
Repairs and Furniture	3	10	0
Coals, Gas, Tea, Postage, &c.	97	7	9
Salaries	215	0	0
Expenses of the Society's Publications	825	10	1
Books purchased	42	19	11
Bookbinding and Stationery	22	16	1
Commission	15	1	7
	£1228	5	5
Invested in Great Indian Peninsula Railway Debenture	90	6	8
Balance in the hands of the Bankers	250	9	7
	£1569	1	8

W. WILSON SAUNDERS, *Treasurer.*

The foregoing Accounts have been examined, and the Balance in hand found to be correctly stated at £250 9*s.* 7*d.*

GEORGE BENTHAM, *President.*
R. C. A. PRIOR,
ALFRED W. BENNETT,
DANIEL HANBURY,
HENRY LEE,
FREDERICK CURREY.

May 20th, 1870.

OBITUARY NOTICES.

The Secretary then read the following notices of deceased *Members*.

The Rev. John Barlow, M.A., F.R.S., was born at Halberton, in Devonshire, of which parish his father was the Vicar. He was educated at Tiverton School and at Trinity College, Cambridge, where he took high honours. He was for a short time Rector of Little Bowden, near Market Harborough; but from the weak state of his health, he found himself unfitted for clerical work, and went to reside in London. The late Prince Consort offered him the post of Chaplain to the Household at Kensington, which he accepted, and held until the year before his death. From 1842 to 1860, Mr. Barlow was Honorary Secretary of the Royal Institution, for which post he was well qualified, both by his scientific acquirements and his social position. He was an intimate friend of the late Professor Faraday, to whom he was able to afford considerable assistance in the affairs of the Institution; and many of the members and their friends will entertain a kindly recollection of the hospitality shown by Mr. and Mrs. Barlow at the Friday evening gatherings in their house in Berkeley Street. Mr. Barlow died on the 8th of July, 1869. He was elected a Fellow of our Society on the 2nd of June, 1829.

Edward William Brayley, F.R.S., was born in the year 1801. He was a pupil at the Royal Institution under the late Professor Brande, and in 1822 he joined the staff of the 'Philosophical Magazine' and the 'Zoological Journal,' to both of which he contributed many original papers, besides notices on chemistry, geology, zoology, and astronomy. He was also the author of a "Report on Observations of Luminous Meteors," which was published in the 'Report of the British Association for 1863,' and of papers upon the constitution and functions of the sun, which appeared in the 'Companion to the British Almanac.' At the London Institution he delivered for some years a systematic course of lectures upon geology, palæontology, and astronomy; and he also lectured at the Royal Institution upon volcanoes and igneous geology. In 1859 Mr. Brayley communicated to the Royal Society a memoir entitled "On the apparent universality of a principle analogous to gelatine, on the physical nature of glass, and on the probable existence of water in a state corresponding to that of glass." This communication was published in the tenth volume of the 'Proceedings of the Royal Society.'

Mr. Brayley was a gentleman of very extensive reading and information, and he was always ready to afford assistance in any matter of scientific investigation or pursuit, especially to the readers at the London Institution, at which he was the Principal Librarian, as well as Professor of Physical Geography and Meteorology.

He died suddenly of heart-disease on the 1st of February, 1870, in the 69th year of his age, having been elected a Fellow of our Society on the 2nd of December, 1834.

Carl Gustav Carus was born on the 3rd of January 1789 at Leipsic. His father was a dyer by trade, and the future Anatomist and Physiologist commenced life with the study of Chemistry, in order that he might be able to assume the direction of his father's establishment. Subsequently, however, he turned his attention to medicine. He delivered private lectures at the University of Leipsic on the science of Comparative Anatomy, the study of which received at that time a great impetus from the teachings of Cuvier.

During the war of 1813 he was at the head of the French Hospital at Pfaffendorf, near Leipsic, and in the following year was appointed Director of the Institution of Clinical Obstetrics at Dresden, and Professor at the Medico-Chirurgical Academy in that capital. Having received the appointments of Court Physician and Councillor of State, he accompanied, in 1827, the Prince of Saxe on his travels in Italy and Switzerland.

On his return to Dresden, he gave himself up to painting, which he cultivated with considerable success. His scientific reputation, nevertheless, was fully maintained, and in 1859 he was named Corresponding Member of the French Institute.

The following are among the more important of the numerous works and papers published by him.

1. 'Versuch einer Darstellung des Nerven-Systems, und insbesondere des Gehirns,' 1814.

2. 'Traité de Gynekologie,' 1820.

3. 'Erläuternde Tafeln zur vergleichenden Anatomie,' a work of great value, which was published in Parts, from 1826 to 1855, and includes 74 Plates.

4. 'Grundzüge der vergleichenden Anatomie und Physiologie,' 1828.

5. 'System der Physiologie,' 1838–40.

6. 'Grundzüge der Cranioskopie,' 1841.

7. 'Atlas de Crânioscopie,' 1843–1844.

8. 'Beobachtung einer sehr eigenthümlichen Schimmelvegetation (*Pyronema Marianum*) auf Kohlenboden' (Acta Acad. Nat. Cur. tom. xvii.), 1834.

But besides these he wrote several works on metaphysical subjects, Landscape Painting, Travels in France, England, Scotland, &c.

He was elected a Foreign Member of our Society on the 7th of May, 1839, and died at Dresden on the 28th of July, 1869, in his 82nd year.

General Sir William Macbean George Colebrooke, of the Royal Artillery, was the son of the late Colonel Paulette William Colebrooke, of the Royal Artillery, and was born in 1787. He received his early education for the service at Woolwich, and obtained his first commission in the Royal Artillery in 1803. In 1810 he served as Captain in the Island of Java, where he was wounded. In 1812 he served in the same island as Deputy Quartermaster General. He took part in the Mahratta war in 1817, and in the expedition to the Persian Gulf in 1818. From 1823 to 1831 he held the post of Commissioner of Eastern Inquiry.

In 1834 he was appointed to the Governorship of the Bahama Islands, and in 1837 to the Governorship of the Leeward Islands. From 1841 to 1848 he held the post of Lieutenant-Governor of New Brunswick, and he was then nominated Governor and Commander-in-Chief of British Guiana. Shortly after the latter appointment he was transferred to the Governorship of Barbadoes, which he held down to 1856. With this year his active public services appear to have ended, and on his return to England he settled down in the neighbourhood of Windsor, where he spent the latter years of his life. He attained the rank of Major-General in 1854, and of Lieutenant-General in 1859. He was honoured with the Knighthood of the Hanoverian Order by King William in 1834, and was nominated a Companion of the Bath (Civil Division) in 1848. He died at his residence at Salt Hill, near Slough, on the 6th of February, 1870. He was elected a Fellow of our Society on the 5th of November, 1822.

Jonathan Couch was born at Polperro, in Cornwall, on the 15th of March, 1789. He was educated at the Grammar School at Bodmin, and afterwards, having studied as a pupil at the Hospitals of St. Thomas's and Guy's, he adopted the medical profession. He devoted, however, much of his time to the study of Natural History, and was the editor of the annotated edition of 'Pliny's Natural History,' published by the Wernerian Club. He afforded much assistance to Bewick when that naturalist was engaged in preparing a 'Natural History of British Fishes,' aud he also took a large share in furnishing the materials for Mr. Yarrell's great work 'The His-

tory of British Fishes.' In 1843 he published Parts 1 & 2 of 'The Cornish Flora.' His work on 'The Illustrations of Instinct' appeared in 1847, and his 'History of the Fishes of the British Isles' was issued in parts in the years from 1860 to 1865. In 1868 he was awarded a Gold Medal at the International Piscicultural Exhibition held at Havre, for a paper on the economic uses of fisheries. Mr. Couch was a contributor both to the Transactions and the Journal of our Society. His papers in the Transactions are to be found in the fourteenth and eighteenth volumes, the first entitled "Some Particulars of the Natural History of Fishes found in Cornwall," and the second, "Notice of the Occurrence of *Procellaria Wilsoni* on the British Coast." His papers in the Journal are five in number, and appeared in the first, second, fifth, sixth, and ninth volumes, the subjects being (in the order in which they appeared)—1. "On the Occurrence of *Sepia biserialis* in Cornwall;" 2. "Note on the Occurrence of *Phyllosoma commune* on the coast of Cornwall;" 3. "Discovery of *Alpheus Edwardsii* on the Coast of Cornwall;" 4. "Note on the Occurrence of the Crustacean *Scyllarus arctus* in England;" and 5. "Some Account of a newly-discovered British Fish of the Family Gadidæ and the Genus *Couchia*." Besides those already mentioned, Mr. Couch was the author of several other papers on subjects connected with natural history, including geology. In the 'Catalogue of the Royal Society' the titles of fifty-six papers are given, and it has been said that that list is by no means a complete one.

Besides his acquirements in Natural History, Mr. Couch devoted a considerable time to Archæology, and he was also an accomplished linguist, having been acquainted with Hebrew and Syriac, besides several modern languages. He was elected a Fellow of our Society on the 16th of March, 1824, and died at Polperro on the 13th of April, 1870, in the 82nd year of his age.

John Hogg, M.A., F.R.S., was a native of Norton, near Stockton-on-Tees, in the County of Durham, where he was born in the year 1800. He was educated at St. Peter's College, Cambridge, where he took the degree of B.A. in 1822, and of M.A. in 1827. For three years from 1823 he was a Travelling Bachelor of the University, and he became a Fellow of St. Peter's College on the Ramsey Foundation in 1827. As Travelling Bachelor, he visited Sicily and other parts of Southern Europe. His tour in Sicily was made in the spring of 1826; and he afterwards published, as one of its results," "Observations on some of the Classical Plants of Sicily," which appeared in the first volume of Hooker's 'Journal of Botany.' He also published

a paper "On the Geography, Geology, and Vegetation of Sicily," in the 3rd volume of 'Loudon's Magazine of Natural History' (1830), and "A Catalogue of Sicilian Plants, with some remarks on the Geology and Geography of Sicily," in the 10th volume of the 'Annals of Natural History' (1842). Mr. Hogg was a frequent attendant at our meetings, and made at different times several contributions to our publications, amongst which may be mentioned three papers upon *Spongilla fluviatilis*, in which he contended that the River Sponge belonged to the vegetable kingdom, and claimed priority over Mons. Laurent as the discoverer of the locomotive germ-like bodies of *Spongilla*.

Mr. Hogg died on the 16th of September, 1869, at Norton House, Stockton-on-Tees. He was elected a Fellow of our Society on the 5th of March, 1822.

Sir William Charles Hood, Knight, was born in the year 1825. He studied at Guy's Hospital and became a Doctor of Medicine of the University of St. Andrew's in 1846. In 1863 he became a Fellow of the Royal College of Physicians of London. From 1849 to 1852 he was one of the resident medical officers of Colney Hatch Lunatic Asylum. He subsequently obtained the appointment of Resident Physician to Bethlem Hospital, which office he held until 1864, when he was appointed one of the Lord Chancellor's Visitors of Lunatics. He was afterwards elected Treasurer of the united Hospitals of Bethlem and Bridewell. Sir William C. Hood was an able and intelligent observer, who enjoyed large opportunities for gaining experience in all the phases of mental disorder. He was the author of various essays on insanity, the chief of which were 'Suggestions for the future Provision of Criminal Lunatics,' published in 1854; 'Statistics of Insanity, being a Decennial Report of Bethlem Hospital from 1846 to 1855;' 'Statistics of Insanity continued and republished from 1846 to 1860.' Sir W. C. Hood was also the author of papers on "The Pathology of Insanity" in the 'Psychological Journal.' In the performance of his professional duties he had to make a lengthened journey in the middle of winter, at a time when his failing health required a complete cessation from work. The exertion seems to have been too great for him, and he died at Bridewell Hospital on the 4th of January, 1870, at the age of 45. He was elected a Fellow of our Society on the 21st of January, 1858.

Mr. Peter Jones, late of Norton Folgate, was born in the year 1808. He was in his youth a student at the Birkbeck Mechanics' Institution, where he was remarkable for his attachment to the pursuit of Natural History, especially Botany, and where he also

acquired a knowledge of Mineralogy and Chemistry. Having passed through his period of studentship he became a lecturer on Chemistry, in which he attained considerable success, having lectured at the Marylebone Institution, at the Metropolitan, at Salvador House, and other literary and scientific institutions. He afterwards established himself in Norton Folgate as a scientific and manufacturing chemist, and commenced business by a series of conversaziones at his house, which were rendered attractive by the exhibition of objects of natural history, and by Mr. Jones's familiarity with the use of the microscope in the investigation of such objects. He was a Fellow of the Royal Microscopical Society, to which he was elected on the 12th of December, 1860. On the 20th of June, 1861, he was elected a Fellow of our Society, and was a frequent attendant at our meetings. He died rather suddenly of angina pectoris, on the 15th of March, 1870, in the 62nd year of his age.

George Cranmer Kenrick, M.R.C.S., was a younger son of a Lincolnshire squire. In early life he was a pupil of Abernethy, and attended lectures at St. Bartholomew's Hospital and at the London Hospital. At the latter Institution he for a time filled the office of House Surgeon. Mr. Kenrick first settled in general practice at Uxbridge, but after a short residence there he removed to Melksham, in Wiltshire, where for many years he was a leading practitioner. His professional engagements left him but little leisure, but he took great interest in Botany and other branches of Natural History, and in science generally, and some portion of his spare time was devoted to painting. He was a man of taste and refinement, and was highly respected for his professional skill as well as his great benevolence and kindness to the poor. Failing health compelled him to withdraw from practice. He passed a winter in Italy, but on his return he gradually grew worse, and died on the 13th of November, 1869, at the age of 63, after a painful illness, borne with courage and patience. He was elected a Fellow of our Society on the 21st of February, 1832.

Dr. Charles James Meller was born in the year 1836, and was educated for the medical profession. He became a Member of the Royal College of Surgeons of England in 1857. He subsequently travelled in Africa with Dr. Livingstone, and also in Madagascar, and during those journeys suffered much from attacks of fever. He was afterwards appointed Superintendent of the Botanic Gardens at the Mauritius, and in the course of the last year was instructed by the Government of that island to collect different varieties of the sugar-cane. In furtherance of this object he proceeded to Queens-

land, intending afterwards to visit some of the Pacific Islands and other places. At Queensland he collected and forwarded to the Mauritius a large quantity of sugar-canes. Unfortunately he was at Queensland at the hottest season of the year, and he was taken ill with a renewed attack of his former fever. With some difficulty he was removed to Sydney, where he arrived in a seriously debilitated state. It was thought advisable that he should be removed to a cooler part of the country, and Berrima was fixed upon, a place about eighty-three miles from Sydney, rather more than 2000 feet above the level of the sea, and having a cool mountain air. He did not, however, derive the benefit which was hoped for; the debility from which he was suffering increased, and he died on the 26th of February, 1869, at the early age of 33 years. He was elected a Fellow of our Society on the 6th of June, 1867.

Giuseppe Giacinto Moris was born at Orbessano on the 25th of April, 1796. He was brought up to the study of Medicine, for which he obtained the prize of the University of Turin in April 1815. In 1822 he went to Sardinia, having been appointed Professor of Clinical Medicine in the University of Cagliari. At that time the governor of Sardinia was desirous of meeting with a botanist to whom he could entrust the collection and description of the plants of Sardinia, and knowing Moris's botanical zeal, he engaged him to compile the Flora of Sardinia, associating with him as assistant Dr. Carlo Bertero, now well known from his voyage to the Antilles. When Bertero's health failed, Domenico Lisa, a young gardener, was appointed in his place, to whom Moris acknowledged himself to have been much indebted, and to whom he dedicated some of the new species of Sardinian plants.

Moris's journeys in Sardinia extended over about four years. They were carried on under considerable difficulties owing to the want of conveniences for travelling, and the unhealthiness of many of the localities. He made a rich collection of the plants of the island, which were at that time almost unknown to botanists. The two first fasciculi of the *Elenchus stirpium Sardoarum*, and the appendix to the second fasciculus, were published at Cagliari in 1827, and the third and last part was published at Turin in 1829. In this work Moris gave a Catalogue of all the species gathered by him in Sardinia, with indications of the habitats and times of flowering, and a summary of new and rare species. This work was the prelude to that to which he devoted almost his whole life, and which he spared no pains to make perfect. Not content with the great herbaria of Allioni, Balbis, Bertero, and others at the Botanic

Garden of Turin, he went to Paris and London, to examine, amongst others, the herbaria of Desfontaines and Linnæus, and he several times visited Florence, to consult the herbarium of the Museum of Physics and Natural History. He also cultivated Sardinian plants in the Botanic Garden at Turin, and thus rendered more exact the notes and descriptions he had made upon the spot. In this way he was enabled to publish the 1st vol. of his 'Flora Sardoa,' in 1837, the 2nd volume between the years 1840–43, and the 3rd volume in the years 1858–59. These volumes contain descriptions of the dicotyledonous plants, together with figures of the new or rare species, and form a profoundly scientific work, the first example, after the 'Herbarium Pedemontanum' of Colla, of a flora arranged according to the natural system.

Another important work, the 'Florula Caprariæ,' was written by Moris in conjunction with his pupil and friend Prof. de Notaris. In this work Moris availed himself of the plants collected by de Notaris and by Domenico Lisa in the summer of 1837, and of those brought from the island in the following year by Prof. Gené and Sign. Francesco Comba. The work comprises a catalogue of all the phænogamic and cryptogamic species found there, with figures and descriptions of some new species, such as *Centaurea gymnocarpa*, *Linaria Caprariæ* and others.

In his 'Stirpes novæ vel minus cognitæ' Dr. Moris described some new species of Sardinian plants, and he also gave an account of some plants found in Chili under the title of 'Plantæ Chilenses novæ minusve cognitæ.' He laboured zealously in the improvement of the Botanic Garden of Valentino, which he enriched with additional forcing-houses, with many new plants, and a beautiful Arboretum. He was not a contributor to our Journal or Transactions, but the Society is indebted to him for the copies of the 'Flora Sardoa' and the 'Florula Caprariæ' which are to be found in our Library.

He was elected a Foreign Member of our Society on the 5th of May, 1864, and died on the 18th of April, 1869, in the 73rd year of his age.

Charles Prideaux was born at Kingsbridge, in Devonshire, on the 2nd of January, 1782. During his youth and for a few years of his adult life he resided at Plymouth, but afterwards returned to his native place, Kingsbridge, where he continued until his death. He took great interest in pursuits connected with natural history; his collection of British Shells was an excellent one, and his persevering labours in dredging were the means of bringing to light rare and previously unknown specimens in marine zoology. The small

Hermit, or Soldier Crab, to which Dr. Leach gave the name of *Pagurus Prideauxi*, and which inhabits the sea on the southern coast of Devon, was named after Mr. Prideaux, by whose assistance, in sending a good series of specimens, Dr. Leach was enabled to ascertain that that species was distinct from *P. Streblonyx*. Mr. Prideaux observed it in a great variety of habitations, even in the tubes of the *Dentalia*, and in the shell of *Scaphander lignarius*. Dr. Leach continually refers to Mr. Prideaux as an indefatigable collector, and one of his most constant correspondents. Some years ago Mr. Prideaux presented to the Museum of the Plymouth Institution a very good collection of Crustacea, a large proportion, if not the whole, of them having been collected by himself, chiefly in Plymouth Sound, Bigbury Bay, and Kingsbridge Estuary. He always took a warm interest in everything connected with his native town, and a few years ago he presented his collection of stuffed birds and other curiosities to Kingsbridge, intending it to form the nucleus of a more general museum. Although confined to his bed for many years through illness and infirmity, his intellect remained bright to the last. He died at Kingsbridge on the 19th of July, 1869, in his 88th year. He was elected a Fellow of our Society on the 21st of December, 1813.

Johannes Evangelista Purkinje, Doctor of Medicine and Philosophy and Professor of Physiology in the University of Prague, was born at Libochovitz, in Bohemia, on the 17th of December, 1787. He was educated at the School of Libochovitz, and, after having had a course of instruction in music, he was sent as a chorister to Nicolsberg, in Moravia, where he entered the order "Patres piarum Scholarum," with the determination to devote himself exclusively to science and literature. After a novitiate of about a year, he was sent to Strážnic, in Hungary, as a teacher, where he occupied himself with the study of the Bohemian literature, paying great attention at the same time to the French and Italian languages. In 1806 he was a tutor in the normal school at Leitomischlin, in Bohemia, where he studied closely the German philosophy, especially that of Fichte. Thinking at that time that a cloister life was not well suited for attaining the position in science to which he felt he might aspire, he left the religious order and settled at Prague, where for some years he acted as a private tutor in different families, devoting himself also at the same time to the study of medicine. In 1818 he obtained the degree of Doctor of Medicine in the University of Prague, and became assistant in Anatomy and Physiology to the Professors Ilg and Rottenberger. He continued in that employment until the year

1822, when he was appointed Professor of Physiology at the University of Breslau, and shortly afterwards Professor of Medicine in the same University. This latter nomination caused great dissatisfaction amongst the professors and students at Breslau, who looked upon the appointment of an Austrian as an offence to themselves; but in the course of the next two years Purkinje, by the aid of his astonishing learning and his obliging and unassuming disposition, managed to overcome the prejudices of his colleagues, and to be on the best of terms with them. He remained in Breslau for many years, where, amongst his other labours, he exerted himself to establish a Physiological Institute, which he succeeded in doing in the year 1842. Previously to this time, however, in 1835, shortly after the death of his wife, he had become anxious to return to Prague, where he hoped to have become Professor either of Anatomy or Physiology. His long absence, however, was raised as an objection, and he failed at that time in obtaining either appointment. In 1848 he took part in the Slavic Assembly at Prague, on the occasion of the jubilee, or celebration of the five-hundredth anniversary, of the University, at which time he was nominated Doctor of Philosophy. He still felt a longing to spend his last years in the land of his birth,—a wish which was gratified by his appointment, in the summer of 1850, to the Chair of Physiology in the University of Prague. His first care was the efficient establishment of the Physiological Institute, then in its infancy. Afterwards he directed his attention to the encouragement of the advancement of natural science in the Bohemian language, of which the periodical entitled 'Živa,' which, from 1853 to 1864, was published under the superintendence of himself and Professor Krejčrs, affords ample proof; as also the 'Journal of the Bohemian Museum,' to which he contributed numerous articles. One of his later and most important inquiries was with reference to the effect of sound in the interior of the skull. By the use of certain instruments he came to the conclusion that the locus of this kind of hearing appeared to be situated in the hinder part of the skull. From observations at a deaf and dumb asylum, he found that almost all the patients had the capability of hearing through the medium of the skull. The newspapers thereupon circulated a report that Purkinje had made a discovery which would enable all deaf people to hear; and he was so overwhelmed with inquiries upon the subject, that he was obliged to send out a pamphlet, stating that his observations had not as yet advanced beyond the stage of theory.

In 1868 the fiftieth anniversary of his Doctor's degree was celebrated by his pupils and colleagues at Prague, and he received on

that occasion from the Emperor of Austria the Leopold decoration, which raised him to the rank of nobility—a promotion which he did not long survive. His death took place, after a short illness, on the 28th of July, 1869. It would be impossible, within the limits of this biographical notice, to give any adequate notion of the services rendered by Dr. Purkinje to science and literature, especially physiology.

A catalogue of his writings was published by the Bohemian Society of Physicians in 1868, and extends over 10 small quarto pages. The titles of more than 180 different works and papers are given in this catalogue. Fifty-five of these titles are in the Bohemian language, the others in German or Latin. Of the German and Latin works 24 relate to botany or zoology, the rest to physiology and a few other scientific and literary subjects.

Dr. Purkinje was elected a Foreign Member of our Society on the 6th of May, 1851.

John William Salter, *A.L.S.*, *F.G.S.*, was born on the 15th of December, 1820. After an education at a private boarding-school he was, in April 1835, bound apprentice to James de Carle Sowerby, with whom he was engaged in drawing and engraving the plates of Sowerby's 'Mineral Conchology,' then in progress towards completion, and also the plates of the 'Supplement to Sowerby's English Botany,' and of Loudon's 'Encyclopædia of Plants,' and of Murchison's 'Silurian System.' The figures for these and many other scientific works engraved by Mr. Salter at this time being all drawn from the actual specimens, helped, no doubt, materially to train his eye to that perfect knowledge of fossil forms which in later years rendered him so distinguished and keen a palæontologist. In 1842 he visited Cambridge, where he remained for a short time to assist Professor Sedgwick in arranging the fossils of the Woodwardian Museum. In the same year, at the age of 26, he entered upon the Geological Survey, and for eight years served as chief assistant to the palæontologist, Prof. Edward Forbes; Mr. Salter shared with Prof. Forbes in the arrangement, description, and cataloguing of the public fossil collections of the survey, and took part in the field-work and in all other duties. On the retirement of Edward Forbes, Prof. Huxley was appointed to the post of Naturalist to the Geological Survey, and Mr. Salter was installed in the office of Palæontologist. In consequence of the increasing extent of the labour of the Geological Surveyors the examination of the Irish fossils was, in 1856, handed over to Mr. W. Hellier Baily, and in the following year Mr. Robert Etheridge, having been appointed Assistant Naturalist to the Geological Survey, took charge of the fossils of the Se-

condary and Tertiary formations of Britain, thus leaving Mr. Salter free to devote his whole energies to his favourite work, the fossils of the palæozoic formations. During his period of office Mr. Salter prepared three Decades with 10 plates each (8vo size) on the Trilobites in the collection at Jermyn Street, and, in conjunction with Prof. Huxley, a Monograph on the genus *Pterygotus* illustrated with sixteen folio plates. He also completed a decade on the Echini commenced by Prof. Forbes, and supplied a part of the palæontology to Prof. Phillips's Memoir on Malvern. The palæontological portion of Prof. Ramsay's Memoirs on North Wales was also written by Mr. Salter. More than thirty papers by Mr. Salter on various geological topics are to be found in the Journal of the Geological Society; and he also wrote in the Annals and Magazine of Natural History, the Geological Magazine, and other Journals. Four parts of a Memoir on British Trilobites, illustrated by thirty 4to plates and containing 216 pages of text, have been published by the Palæontographical Society. In Murchison's 'Siluria' and Lyell's 'Manual' Mr. Salter's services are apparent and acknowledged. He also described fossils from the Himalayas, Australia, China, South Africa, Canada, Oregon, and other places. He projected and, conjointly with Mr. Henry Woodward, prepared a tabular view of British Fossil Crustacea, showing their range in time, which was engraved and published by M. J. W. Lowry in 1865; and, but for the great expense attending the engraving, several other groups were also intended to be tabulated. After his retirement from the office of Palæontologist to the Geological Survey in 1863, he was engaged at various times arranging and naming the Palæozoic Invertebrata of the Manchester, Leicester, Leeds, Worcester, Malvern, Taunton, and Cambridge Museum collections, and he also executed numerous plates and woodcuts. A catalogue, illustrated by himself, of the Cambrian and Silurian Fossils in the Woodwardian Museum was one of the last tasks which he undertook. It remains uncompleted, as does his Monograph on the Trilobites.

Mr. Salter died on the 2nd of August, 1869, having been elected an Associate of our Society on the 15th of November 1842.

Professor Michael Sars, of Christiania.—This eminent zoologist was born on the 30th of August, 1805, at Bergen, where his father was a ship-owner. After finishing his academical studies at Christiania, and evincing at an early age his predilection for natural science, he entered into priest's orders, and in 1830 became pastor at Kinn, in the diocese of Bergen. Ten years afterwards he had charge of the parish of Manger in the same diocese. As both these parishes were on the sea-coast, Sars had constant opportunities of pursuing his

zoological researches. In 1829 he published his first essay, entitled "Bidrag til Söedyrenes Natur-historie," and in 1846 the first part of his celebrated work 'Fauna littoralis Norvegiæ.' In 1854 he was appointed Professor Extraordinarius of Zoology at the University of Christiania, a position which he filled up to the time of his lamented death with great honour to his country, and to the satisfaction of the whole world of science. His celebrity as a zoologist, as well as a palæontologist, was fully recognized by all naturalists and geologists, and he was elected a member of several foreign scientific societies. Our own distinguished countryman, the late Edward Forbes, individually showed his appreciation of Sars's labours in eloquent pages (66 and 67) of his own posthumous work, 'The Natural History of the European Seas,' when he said, "More complete or more valuable zoological researches than those of Sars have rarely been contributed to the science of Natural History, and the success with which he has prosecuted investigations claiming not only a high systematic value, but also a deep physiological import, is a wonderful evidence of the abundance of intellectual resources which genius can develope, however secluded and wherever its lot be cast;" and he added that the name of this Norwegian priest "(who reaped reputation when seeking no more than knowledge), familiar to every naturalist in Europe and America, in Asia, and at the Antipodes (for there are great naturalists settled far in the south, and many in the far east), is a sufficient proof that able work brings the rewards of applause and veneration, even when they be unasked for." By the observations of Sars on the development of the Medusæ he greatly advanced our knowledge of that remarkable physiological phenomenon known as the alternation of generations, which Chamisso had first indicated in the Salpæ. His last publication, 'Mémoire pour servir à la connaissance des Crinoïdes vivants,' caused especial interest, by showing that a race of animals, supposed to be extinct for a period so long as only to be measured by the duration of several past geological epochs, occurred in a living state in the abysses of the Norwegian seas. This discovery mainly induced the recent exploration of our own seas at great depths, which has produced such wonderful results; and the living Crinoid, or "stone-lily" (*Rhizocrinus Lofotensis*), has now been ascertained to inhabit many parts of the Atlantic from the Loffoden Isles to the Gulf of Mexico. The published works of Sars are seventy-four, and they are not less sound and valuable than numerous. One of his sons, Dr. George Ossian Sars, inherits the zoological inclinations

and talent of the late Professor, and is second to none in the knowledge of the Sessile-eyed Crustacea.

He was elected a Foreign Member of our Society on the 3rd of May, 1860, and died on the 22nd of October, 1869. His loss will be much regretted by all naturalists, and especially by those who have benefited by his long, laborious, and conscientious investigation of the invertebrate fauna of the Norwegian seas.

Captain Charles Sturt, "the Father of Australian Exploration," as he has been called, was born in India in 1796, and was the eldest son of Thomas Napier Lennox Sturt, of the B.C.S. Capt. Sturt was educated at Harrow, and on leaving that school obtained a commission in the 39th regiment. After seeing some hard service in America and Ireland, he accompanied his regiment in 1827 to New South Wales, where, at head-quarters at Sydney, he was shortly after his arrival appointed Brigade-Major. At that time much discussion was taking place in Sydney respecting the physical geography of Australia, of which little or nothing was then known. Capt. Sturt took a keen interest in the debate, and became a partisan of the "Great Central Lake" theory. The map of the island continent at that period was little more than the bare outline of the coast; and even in this outline there were huge gaps representing hundreds of miles. Oxley alone had gone far inland; and his researches had only shown him that the one considerable stream known to exist dwindled away, growing shallower and shallower, until it fairly spread out and lost itself under enormous reeds in a desolate marsh. Oxley, however, had journeyed in a wet season, and Capt. Sturt thought it might be worth while to try the experiment again in a time of drought. He soon had a chance of carrying his plan into execution. For two years the drought was excessive; to use his own words, "The surface of the earth became so parched up that minor vegetation ceased upon it. Culinary herbs were raised with difficulty, and crops failed even in the most favourable situations. Settlers drove their flocks and herds to distant tracts for pasture and water. The interior suffered equally with the coast, and men at length began to despond under so alarming a visitation. It almost appeared as if the Australian sky were never again to be traversed by a cloud." In November 1828 Capt. Sturt started on his first expedition with a friend, a couple of soldiers, and six convicts. After tracing the Macquarrie to its swamp, they journeyed, and began to suffer bitterly from want of water. They toiled along over the parched soil feverish with thirst, when they perceived a

broad river in the distance, which Capt. Sturt thus describes:—"Its banks," he says, "were too precipitous to allow of our watering the cattle; but the men eagerly descended to quench their thirst, which a powerful sun had contributed to increase; nor shall I ever forget the cry of amazement that followed their doing so, or the look of terror and disappointment with which they called out to inform me that the water was so salt as to be unfit to drink." Thus was the river Darling discovered in 1829. Capt. Sturt had explored 1300 miles of unknown country, the bulk of which is now used for pasture or tillage; and in the following year he set out upon a still more memorable journey. Leaving Sydney in September 1829, he followed the course of the Murrumbidgee, a deep and rapid stream, widely different in its character from the Lachlan or the Macquarrie. The natives whom they met upon their way assured them that they would find a still larger river further on, flowing from south-east; and yet soon after receiving this encouragement they found the stream becoming shallow, and the marsh reeds made their appearance. Every day the difficulties increased, and it was plain that they would have to leave their cattle and heavy baggage behind. A depôt was formed, and the drags and cattle were sent back. Capt. Sturt put together a whaleboat and embarked with a friend (Mr. George McLeay) and six men. A skiff containing their provisions was in tow; but before long it was upset, and many of the stores were lost. Snags impeded the navigation, and more than once the wreck of the boat seemed inevitable. Being confident that they were on the right track, Capt. Sturt held on until one day the look-out man exclaimed that they were approaching another stream, and in a few minutes more their boat was swept into the main current of the River Murray, following which they soon reached another river, which Capt. Sturt at once declared to be the Darling, a theory long disputed, but which ultimately proved correct. They went on until the Murray poured itself into the great salt expanse which Capt. Sturt called Lake Alexandrina, within sight and sound of the sea. A great geographical problem had been solved, and a noble service rendered to England. The return journey against the rapid current of the stream was terrible work for the whole party. Capt. Sturt suffered severely in both these expeditions, so much so that when he published his book in 1833 he was almost blind; but his passion for exploring continued, and after being employed for some years as Colonial Surveyor for South Australia, he matured another plan for an inland journey, this time towards the very centre of the continent, and set out in September of 1844. There has seldom

been a more unfortunate expedition. The plan was good; his followers were eminently fit for the work; and yet it resulted in misery and failure. As it happened the party just hit upon the worst part of the whole land. Often by going a few miles out of their course they might have got into more fertile country, but though they spared no toil and feared no danger, some fatality seemed to attend them. The hardships they endured were horrible. The second in command, Mr. Poole, sank rapidly and died of black scurvy, but Capt. Sturt, whose activity was indefatigable, persevered and discovered Cooper's Creek. At last, to save his life, he was compelled to turn back. He reached one of his depôts, but only to find it deserted. Ultimately he arrived at Adelaide in safety, but he was blind, and to the end of his life he never quite recovered his eyesight. On leaving the army, after a short residence in the interior of New South Wales, he passed into the neighbouring colony of South Australia, where, as its discoverer, he was received with the most marked respect, and where he continued to reside for about fifteen years, holding successively the offices of Assistant-Commissioner, Registrar-General, Treasurer, and Colonial Secretary. In 1853 he retired on a pension, and on his return to England went to live at Cheltenham, where he died on the 16th of June, 1869. If he had lived for another month it is understood that he was to have been included in the list of Knights Commanders of the Order, then just resuscitated, of St. Michael and St. George, a too tardy recognition of the great services for which England is so largely indebted to him. Capt. Sturt published valuable narratives of his three great expeditions. His account affords much interesting matter in different branches of natural history. We are indebted to him for the discovery of many of the most beautiful and interesting birds of Australia, one of which, *Plyctolophus Leadbeateri*, is perhaps the handsomest of the Parrot tribe to be found in our aviaries. He gave also to our conservatories the beautiful *Clianthus Dampieri*, which has been called "Sturt's Pea." Capt. Sturt was elected a Fellow of our Society on the 16th of April, 1833.

Franz Joseph Andreas Nicholaus Unger was born on the 30th of November, 1800, at Leitschach, in Styria. After the completion of his early education, he commenced the study of the law, at the same time devoting some attention to natural history. After about a year he abandoned the law and went to the University of Vienna, to study medicine. In 1822 he left Vienna, and went for a short time to Prague, where he studied physiology and chemistry. In the following year, after travelling for some time in Germany, he returned

to Vienna to finish his medical studies; but having incurred the suspicion of the Government, apparently on account of what would now be called "liberal principles," he was thrown into prison, and although after some months the severity of his confinement was relaxed, he did not entirely regain his liberty until July 1825. During his imprisonment he devoted much time to studies of various kinds, including botany, having been allowed occasionally, in charge of an officer, to visit the Prater and the Botanic Garden. In 1827 he graduated as a Doctor of Medicine, and practised his profession until 1833, at Stockerau, near Vienna. In 1830 he went to reside at Kitzbühel, in the Tyrol, where he had obtained an official medical appointment. Here he remained for about five years, when, upon the death of Heyne, he was appointed to the chair of Botany at Joanneum in Graz, which he held for nearly 15 years. At the death of Endlicher, a chair of physical botany was established at Vienna. It was offered to and accepted by Unger, who left Graz in the winter of 1849 and entered upon his professional duties at Vienna, which he performed for sixteen years. In 1866, to the great regret of his pupils and scientific friends, he resigned the Vienna professorship, and retired to Graz, where he continued to reside until his death in February of the present year. Dr. Unger's literary and scientific activity is testified by a catalogue of the works and papers published by him from time to time *, and which, exclusive of minor contributions to periodicals, exceed 150 in number. It may be interesting to mention a few of the most important of his writings. In 1827 his observations upon the development of the Zoospores of *Vaucheria clavata* were published by the Academy of Vienna; the 'Exantheme der Planzen' was published in 1833, the 'Aphorismen zur Anatomie und Physiologie der Pflanzen' in 1838; the 'Chloris protogæa' in 1841; the 'Grundzüge der Botanik' in 1843; the 'Grundzüge der Anatomie und Physiologie der Pflanzen' in 1846; the 'Genera et Species Plantarum Fossilium' in 1850; the 'Urwelt in verschiedenen Bildungsperioden' in 1851; the 'Anatomie und Physiologie der Pflanzen' in 1855; the 'Wissenschaftliche Ergebnisse einer Reise in Griechenland und den Ionischen Inseln' in 1862. In January of the present year he communicated to the Academy of Vienna a paper on the primeval *Typhaceæ*, and a few weeks before his death he finished the second part of his 'Geologie der Europaischen Waldbäume,' in which he attempts to trace back the existing Coniferæ to their primitive form in the Tertiary period.

Dr. Unger's death was melancholy and mysterious. He had been

* See Botanische Zeitung of April 22nd, 1870.

suffering for some time from sciatica and chronic rheumatism, and in February of the present year he caught a cold, which laid him up for several days. It was thought he had nearly recovered from the attack when, on the morning of Sunday, the 13th of February, he was found dead in his bed. There were several slight wounds on his head, besides other injuries on the body, and there were traces of blood about the bed. A judicial inquiry was held, but no light was thrown upon the cause of death; and whether it was the result of accident or violence is not, and probably never will be, known.

Dr. Unger was elected a Foreign Member of our Society on the 4th of May, 1852.

James Veitch was born on the 24th of May, 1815, in the neighbourhood of Exeter, where his grandfather and his father were at that time carrying on the business of nurserymen. When about eighteen years of age he was sent to London for two years for the purpose of acquiring experience in a London establishment. One year of this period was passed in the nursery of Mr. Chandler, of Vauxhall, and the other in that of Messrs. Rollisson, of Tooting. Returning again to Exeter, he devoted his energies to the gradual extension and improvement of the establishment at Mount Radford, making it eventually one of the first nurseries of the day; and as a partner in the firm of James Veitch and Son, and subsequently, on the death of his father, as the head of that of James Veitch and Sons, he raised himself to one of the very foremost positions in that line of business. In 1853, while still a partner in the nursery at Exeter, Mr. James Veitch removed to London, and took possession of the establishment at Chelsea, which formerly belonged to Messrs. Knight and Perry. To show how far our gardens are indebted to the labours of Mr. Veitch, it would be necessary to write a history of very many of the new plants introduced during the last 30 years. To his active superintendence of their importation and to his discriminative choice of collectors, may be largely attributed the success which was realized in this department. The later explorations of Pearce, Hutton, and others, by which many fine plants were acquired, were directly under his control; to the results of the foregoing must be added those of the two journeys of his eldest son, Mr. John Gould Veitch, to Japan and the South Pacific, which proved so prolific of novelties. In addition to the esteem in which he was held as an introducer and distributor of plants, Mr. Veitch also occupied an eminent position as a cultivator and exhibitor, especially of Heaths and Orchids. For several years, from 1856 to 1864, Mr. Veitch was a member of the Council of the Royal Horti-

cultural Society, and took an active part in the administration of its affairs. The idea of the Fruit and Floral Committees of the Royal Horticultural Society originated with Mr. Veitch, and a scheme was drawn by him and others, which was virtually that adopted by the Council, and which has not only worked well but has essentially benefited the Society. About two years ago, owing to premonitory symptoms of heart-disease, Mr. Veitch ceased to take so active a part as formerly, either in horticultural affairs or in matters of business; but latterly he had been in better health than usual, so that his death, although under the circumstances not wholly unexpected, took place more suddenly than had been anticipated. He died at Stanley House, Chelsea, on the 10th of September, 1869, at the age of 54. He was elected a Fellow of our Society on the 6th of December, 1866.

June 2nd, 1870.

George Bentham, Esq., President, in the Chair.

The Rev. T. A. Marshall, M.A., was elected a Fellow.

The President nominated J. J. Bennett, Esq., George Busk, Esq., J. D. Hooker, M.D., and W. W. Saunders, Esq., Vice-Presidents for the ensuing year.

Mr. Bell exhibited a flowering specimen of the wild Tulip (*Tulipa sylvestris*, L.), of which a patch about three feet diameter occurs in the Park at Selborne, Hants. In a note to the Librarian, which accompanied the specimen, Mr. Bell states that the plant is undoubtedly wild there, and that it also occurs in two other localities within a few miles of Selborne, viz. at Froyle, and near Theddon Grange, Alton.

Mr. Hanbury, F.L.S., exhibited the dried fruits of two species of *Zizyphus*, collected by the European residents in China, *Red* and *Black Dates*. These fruits are used by the Chinese as articles of food, and are exported in vast quantities from the city of Che Foo. The "Red Dates" appear to be identical with the *Jujubes* of the South of Europe.

The following papers were read :—

1. "On some new forms of Extra-European Trichopterous Insects," by Robert MacLachlan, Esq., F.L.S.

2. "New Lichens, recently discovered in Great Britain," by the Rev. James M. Crombie, M.A., F.L.S., &c.

June 16th, 1870.

George Bentham, Esq., President, in the Chair.

Frank Crisp, Esq., LL.B., and John Clavell Mansel, Esq., were elected Fellows.

The following papers were read :—

1. "Petalody of the Sepals in *Serapias*," by John Traherne Moggridge, Esq., F.L.S.

2. "Notes on the Reptiles, Amphibia, Fish, Mollusca, and Crustacea, obtained during the voyage of H.M.S. 'Nassau,' in the years 1866–69," by Robert O. Cunningham, M.D., F.L.S., C.M.Z.S.

3. "Memoir on the Spermogones and Pycnides of Crustaceous Lichens," by W. L. Lindsay, M.D., F.L.S.

4. "The Fungi of Ceylon (Hymenomycetes)," by the Rev. M. J. Berkeley, M.A., F.L.S., and C. E. Broome, Esq., F.L.S.

5. "Notes on *Gerania*," by F. P. Balkwill, Esq., F.L.S.

ERRATA.

It is requested that the following errors in the preceding pages be corrected.

Page lii. *Transfer to the head of* ENTOMOLOGY *the article* V. Graber. On the Proventriculus *&c.* of Grasshoppers, *entered by mistake under* CRYPTOGAMIC BOTANY, p. lxvii.

Page lxxiii, line 4 from the bottom, *for* Proc. R. Soc. xviii., *read* presented by the author.

Page lxxxii, line 23, *omit the words* no specimens, indeed, of the whole Order.

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	Titles.	Donors.

Academies and Societies.

Adelaide, S. A. :—

Philosophical Society.

Annual Report and Transactions for the year ending Sept. 30, 1868. 4to. Adelaide, 1869.

C. A. Wilson, Esq., F.L.S.

Amsterdam :—

Kon. Akademie van Wetenschappen.

Verslagen en Mededeelingen. Afdeeling Natuurkunde. 2de Reeks, Deel 3. 8vo. Amsterdam, 1869.

Jaarboek voor 1868. 8vo. *Ibid.*

Processen Verbaal van de gewone Vergaderingen der Akademie, van May 1868–April 1869. 8vo. (*Ibid*)

The Academy.

Natura Artis Magistra (Soc. R. de Zoologie).

Bijdragen tot de Dierkunde. Afl. 9. 4to. Amsterdam, 1869.

The Society.

Basel :—

Naturforschende Gesellschaft.

Verhandlungen. Theil 5, Heft 2. 8vo. Basel, 1869.

The Society.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Batavia :—

Kon. Natuurkundig Vereeniging voor Nederlandsch Indie.

Natuurkundig Tijdschift voor Nederlandsch Indie. Deel 30, Afl. 3–6. 8vo. Batavia, 1868. THE ASSOCIATION.

Bath :—

Natural History Society and Antiquarian Field Club.

Proceedings, Nos. 1–3. 8vo. (Bath) 1867–69

THE SOCIETY ?

Berlin :—

Kon. Akademie der Wissenschaften.

Abhandlungen, aus dem. J. 1868. 4to. Berlin, 1869.

Monatsberichte, für März–December 1869, und Januar–April 1870. 8vo. *Ibid.* 1869–70. THE ACADEMY.

Verein zur Beförderung des Gartenbaues, &c. in den Kön. Preuss. Staaten.

Wochenschrift : redigirt von Prof. Dr. Karl Koch, Jahrg. 12. 4to. Berlin, 1869. THE SOCIETY.

Berwickshire :—

Naturalists' Club.

Proceedings, vol. 5, Nos. 4 & 5 ; vol. "6," No. 6 ; and vol. 7, No. 1. 8vo. Alnwick, 1866–69.

GEORGE TATE, Esq., F.G.S.

Bonn :—

Naturhistorischer Verein der Preussischen Rheinlande, &c.

Verhandlungen. Jahrg. 26. 8vo. Bonn, 1869.

THE ASSOCIATION.

Bordeaux :—

Société des Sciences Physiques et Naturelles.

Mémoires, Tome 5, Cahier 4. 8vo. Paris, 1867.

Extrait des procès-verbaux des séances, Tome viii. pt. 1–32. 8vo. *Ibid.* 1869. THE SOCIETY.

Boston, Mass. :—

American Academy of Arts and Sciences.

Proceedings. Vol. 7, Sheets 44–66. 8vo. Boston, 1868.

THE ACADEMY.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Boston, Mass. (*continued*) :—

Society of Natural History.

Memoirs. Vol. 1, pt. 4. 4to. Boston, 1869.

Occasional Papers. No. 1. (**Harris,** *T. W.*, Entomological Correspondence.) 8vo. *Ibid.* 1868–69.

Proceedings, Vol. 12, Sheets 1–17. 8vo, (*Ibid.*) 1868–69.

THE SOCIETY.

Breslau :—

Schlesische Gesellschaft für Vaterländische Cultur.

Abhandlungen. Abtheilung für Naturwissenchaften und Medicin, 1868–69. 8vo. Breslau, 1869.

Jahresbericht (46) für 1868. 8vo. *Ibid.* 1869.

THE SOCIETY.

Brussels :—

Académie Roy. des Sciences, &c., de Belgique.

Mémoires couronnés et Mémoires des Savants Étrangers. Tome 34 (1867–70). 4to. Bruxelles, 1870.

——. Collection in 8vo. Tome 21. 8vo. *Ibid.* 1870.

Bulletins. 2e Série. Tomes 27 & 28. 8vo. *Ibid.* 1869.

Annuaire. 36e année. 12mo. *Ibid.* 1870. THE ACADEMY.

Observations des Phénomènes Périodiques, 1867 & 1868. 4to. (Extr. des Mém., Tome 38.) M. QUETELET.

Société R. de Botanique de Belgique.

Bulletin. Tome 8 (Nos. 1–3). 8vo. Bruxelles, 1862–70.

THE SOCIETY.

Buenos Ayres :—

Museo Público.

Anales : por German Burmeister, M.D. Tomo 1, Entrega 6. 4to. Buenos Aires, 1864–69. THE EDITOR.

Caen :—

Société Linnéenne de Normandie.

Bulletin. 2e Série. Vols. 1 & 2 (1865–66 & 1867). 8vo. Caen, 1867–68. THE SOCIETY.

Calcutta :—

Asiatic Society of Bengal.

Journal. New Series. Vol. 38, Nos. 153–59. 8vo. Calcutta, 1869–70.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Calcutta (*continued*):—

Asiatic Society of Bengal.

Proceedings. Nos. 2, 3, & Nos. 5–11 for 1869, and Nos. 1–3 for 1870. 8vo. Calcutta, 1869–70. THE SOCIETY.

Cambridge:—

Philosophical Society.

Transactions. Vol. 11, pt. 2. 4to. Cambridge, 1869.

——. Title, Index, &c. to Vol. 10. 4to. *Ibid.* 1864.

Proceedings. Pts. 3–6. 8vo. (1866–67.) THE SOCIETY.

Cambridge, Mass.:—

Museum of Comparative Zoology, Harvard College.

Annual Report of the Trustees, &c., 1868. 8vo. Boston, 1869.

Bulletin. Nos. 6 & 7, & 9–13. 8vo. Cambridge, 1867–69.

[Sep. publ. See **Agassiz,** *L.*]

Caracas:—

Sociedad de Ciencias Fisicas y Naturales.

Vargasia. Boletin de la Sociedad. Tomo 1, Nos. 5 & 6. 8vo. Caracas, 1869. THE SOCIETY.

Cherbourg:—

Société Imp. des Sciences Naturelles.

Mémoires. Tomes 13 & 14. (2e Série, Tomes 3 & 4). 8vo. Paris, &c., 1868–69. THE SOCIETY.

Christiania:—Kgl. Norske Universitet.

[Sep. publ. *v.* **Blytt,** *A.*]

Copenhagen:—

Botaniske Forening.

Botanisk Tidsskrift: udgivet af den B. F.; Redigeret at H. Kiærskou. Bind 3, Hefte 2. 8vo. Kjöbenhavn, 1869. PURCHASED.

Kongl. Danske Videnskabernes Selskab.

Skrifter. 5te Række. Naturvid. og Mathem. Afdeling. Bind 8, Nos. 2–5. 4to. Kjöbenhavn, 1869.

Titles.	Donors.

Academies and Societies (*continued*).

Copenhagen (*continued*) :—

Kongl. Danske Videnskabernes Selskab.

Oversigt over det Kgl. D. V. S. Forhandlinger, &c. 1867, Nos. 6 & 7, 1868, Nos. 1–5, & 1869, Nos. 1 & 2. 8vo, Kjöbenhavn. — The Society.

Devonshire :—

Association for the Advancement of Science, Literature, and Art.

Report and Transactions. Vol. 3. 8vo. Plymouth, 1869. — The Association.

Dublin :—

Royal Dublin Society.

Journal, No. 38. 8vo. Dublin, 1869. — The Society.

Royal Geological Society of Ireland.

Journal. New Series. Vol. 2, Pts. 1 & 2. 8vo. London, 1868–69. — The Society.

Royal Irish Academy.

Transactions, Vol. 24. Science, Pts. 9–15. Antiquities, Pt. 8. Polite Literature, Pt. 4. 4to. Dublin, 1867–70. — The Academy.

Edinburgh :—

Botanical Society.

Transactions and Proceedings, Vol. 10, Pt. 1. 8vo. Edinburgh, 1869. — The Society.

Royal Society.

Transactions, Vol. 25, Pt. 2. 4to. Edinburgh, 1869.

Proceedings, Sessions 1868–69. (Vol. 6, Nos. 77–9.) 8vo. *Ibid.* 1869. — The Society.

Falmouth :—

Royal Cornwall Polytechnic Society.

Annual Report (37). 8vo. Falmouth, 1869. — The Society

Frankfurt a. M. :—

Senckenbergische Naturforsc ende Gesellschaft.

Abhandlungen. Bd. 7, Hft. 1 & 2. 4to. Frankfurt a. M., 1869.

Bericht, von Juni 1868 bis Juni 1869. 8vo. *Ibid.* — The Society.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*)

Geneva :—

Société de Physique et d'Histoire Naturelle.

Mémoires, Tome 20, Ptie. 1. 4to. Genève, 1869.

THE SOCIETY.

Genoa :—

Reale Università.

Atti, Vol. 1. (De Notaris. Epilogo della Briologia Italiana.) 8vo. Genova, 1869. THE UNIVERSITY.

Giessen :—

Oberhessische Gesellschaft für Natur- und Heilkunde.

Bericht 13. 8vo. Giessen, 1869. THE SOCIETY.

Göttingen :—

Königl. Gesellschaft der Wissenschaften.

Abhandlungen. Band 14. 4to. Göttingen. 1869.

Nachrichten, aus dem J, 1869. 12mo. *Ibid.*, 1869.

THE SOCIETY.

Greifswald :—

Naturwissenschaftlicher Verein von Neu-Vorpommern und Rügen.

Mittheilungen. Redigirt von Prof. Freih. v. Feilitsch, &c. Jahrgang 1. 8vo. Berlin, 1869. THE ASSOCIATION.

Haarlem :—

Société Hollandaise des Sciences.

Archives Néerlandaises des Sciences Exactes et Naturelles. Tome 4. 8vo. La Haye, &c., 1869. THE SOCIETY.

Halifax, N. S.

Nova Scotian Institute of Natural Science.

Proceedings and Transactions, Vol. 1, Pt. 3, and Vol. 2, Pts, 2 & 3. 8vo. Halifax, 1865–70. THE INSTITUTE.

Hobart Town. See **Tasmania.**

India :—

Forest Reports.

Forest Reports of the Bombay Presidency for the years 1860–61 to 1868–69 (by N. A. Dalzell). 4to. Bombay, 1869.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

India (*continued*): :—

Progress Report of Forest Administration in Mysore for 1867–68, by Lieut. G. J. van Soemeren. Fcap. fol. Calcutta, 1869.

Progress Report of Forest Administration in the Province of Oudh, 1867–68, by Capt. E. S. Wood. Fcap. fol. *Ibid.* 1869.

Annual Reports of the Sind Forests for the years 1860–61 to 1866–67. Sm. 4to. Kurrachee, 1868.

Administration Report of the Sind Forest Department for the years 1867–68 and 1868–69. Sm. 4to. Bombay, 1869.

THE SECRETARY OF STATE FOR INDIA.

Lausanne :—

Société Vaudoise des Sciences Naturelles.

Bulletin, No. 62. 8vo. Lausanne, 1869. THE SOCIETY.

Leeds :—

Philosophical and Literary Society.

Annual Report (49th) for 1868–69. 8vo. Leeds, 1869.

THE SOCIETY.

Leyden :—

Museum Botanicum.

Annales & Catalogus } See **Miquel,** *F. A. G.*

Nederlandsche Entomologische Vereeniging.

Tijdschrift voor Entomologie; onder redactie van Dr. S. C. Snellen van Vollenhoven, &c. Serie 2, Deel 4, Afl. 3–6, Deel 5, Afl. 1 & 2, & Repertorium der acht eerste Jaargangen (1858–65). 8vo. Gravenhage, 1869.

THE ASSOCIATION.

Lisbon :—

Museu Nacional. Secção Zoologica.

Catalogo das Colleções Ornithologicas. Psittaci & Accipitres. Junho de 1869. 8vo. Lisboa, 1869. THE MUSEUM?

London :—

British Association for the Advancement of Science.

Reports of the 38th and 39th Meetings. 8vo. London, 1869–70. THE ASSOCIATION.

TITLES.	DONORS.

ACADEMIES AND SOCIETIES (*continued*).

London (*continued*):—

Clinical Society.

Transactions, Vol. 2. 8vo. London, 1869. THE SOCIETY?

East India Association.

Journal, Vol. 4, No. 1. 8vo. London, 1870. THE ASSOCIATION?

Entomological Society.

Transactions. 3rd Series, Vol. 3, Pt. 7, and Parts 2, 3, 4, 5 & 6 for 1869, and Part 1 for 1870. 8vo. London, 1869–70. THE SOCIETY.

Geological Society.

Quarterly Journal, Vol. 25, Pts. 3 & 4, and Vol. 26, Pts. 1 & 2. 8vo. London, 1869–70.

List of the Members. Nov. 1, 1869. 8vo. *Ibid.* THE SOCIETY,

Palæontographical Society's Publications, Vol. 23. 4to. London, 1870 (including):—

1. **Duncan,** *P. M.* Monograph of the British Fossil Corals. 2nd Series, Part 2, No. 2.
2. **Owen,** *Richard.* Monograph of the Fossil Reptilia of the Liassic Formations. Part 2. Pterorostria.
3. ——. Monograph of the British Fossil Cetacea from the Red Crag. No. 1. Genus Ziphius.
4. **Phillips,** *John.* Monograph of British Belemnitidæ, Part 5.
5. **Powrie,** *James.*, and **Lankester,** *E. Ray.* Monograph of the Fishes of the Old Red Sandstone of Britain. Pt. 1. (concluded).
6. **Wright,** *Thomas.* Monograph of the British Fossil Echinodermata from the Cretaceous Formations. Vol. 1, Pt. 3. Diademadæ. PURCHASED.

Pharmaceutical Society.

Pharmaceutical Journal and Transactions. 2nd Series. Vol. 11. 8vo. London, 1869–70.

Calendar for 1870. 8vo. *Ibid.*, 1870. THE SOCIETY.

Quekett Microscopical Club.

Journal, Nos. 7–10. 8vo. London, 1869–70.

Report, 4th. 8vo. *Ibid.*, 1869–70. THE CLUB.

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London (*continued*):—

Royal Institution.

Proceedings, Vol. 5, Pt. 6 (No. 50). 8vo. London, 1869.

Additions to the Library, No. 12, and Report for 1868. 8vo. — THE INSTITUTION.

Royal Society.

Catalogue of Scientific Papers (1800–63). Vol. 3. 4to. London, 1869.

Philosophical Transactions. Vol. 158, Pt. 2, and Vol. 159, pts. 1 & 2. 4to, *Ibid.*, 1869–70.

Proceedings, Nos. 112–19. 8vo. *Ibid*,, 1869–70.

List of Members, Nov. 30th, 1869. 4to. — THE SOCIETY.

Royal Agricultural Society.

Journal. 2nd Series. Vol. 5, Pt. 2, and Vol. 6, Pt. 1. 8vo. London, 1869–70. — THE SOCIETY.

Royal Asiatic Society of Great Britain and Ireland.

Journal. New Series. Vol. 4, Pts. 1 & 2. 8vo. London, 1869–70. — THE SOCIETY.

Royal Geographical Society.

Journal, Vols. 38 & 39. 8vo. London, 1868–69.

Proceedings, Vol. 13, Nos. 3–5, and Vol. 14, No. 1. 8vo. *Ibid.*, 1869–70. — THE SOCIETY.

Royal Medical and Chirurgical Society.

Medico-Chirurgical Transactions, Vol. 52 (=2nd Series, Vol. 34). 8vo. London, 1869.

Proceedings, Vol. 6, No. 4 & 5. 8vo. *Ibid.*, 1869–70. — THE SOCIETY.

Royal Microscopical Society.

Monthly Microscopical Journal, Nos. 7–18. 8vo, London, 1869–70. — THE SOCIETY.

Society of Arts.

Journal, Nos. 865–916. 8vo. London, 1869–70. — THE SOCIETY.

Zoological Society.

Transactions, Vol. 6, Pt. 8, and Vol. 7, Pts. 1 & 2. 4to. London, 1869–70.

Proceedings of the Scientific Meetings (with illustrations). Parts 1–3, for 1869. 8vo. *Ibid.*, 1869. — THE SOCIETY.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Lund :—

Universitet.

Års-skrift. (Acta) för år 1868. Afd. för Mathematik and Naturvetenskap. 4to. Lund, 1868–9. THE UNIVERSITY.

Lyon :—

Académie Imp. des Sciences, &c.

Mémoires (Nouvelle Série). Classe des Sciences. Tomes 9 & 17. 8vo. Paris, &c., 1859–70. THE ACADEMY.

Société Imp. d'Agriculture, Histoire Naturelle, &c.

Annales des Sciences Physiques et Naturelles, 3e Série. Tomes 8 & 11 (1864 & 1867). 4to. Lyon. THE SOCIETY.

Société Linnéenne.

Annales. Nouvelle Série. Tome 17. 8vo. Paris, 1869. THE SOCIETY.

Manchester :—

Literary and Philosophical Society.

Memoirs. 3rd Series, Vol. 3. 8vo. London, &c., 1868.
Proceedings, Vols. 5–7. 8vo. Manchester, 1866–68. THE SOCIETY.

Montreal :—

Natural History Society.

Canadian Naturalist and Quarterly Journal of Science. New Series, Vol. 3, Nos. 5 & 6, and Vol. 4. 8vo. Montreal, 1868–69. THE SOCIETY.

Moscow :—

Société Impériale des Naturalistes.

Bulletin, Tome 41, Nos. 3 & 4, and Tome 42, Nos. 1–4. 8vo. Moscou, 1869–70. THE SOCIETY.

Munich :—

Kön. Bayerische Akademie der Wissenschaften.

Abhandlungen der Mathematisch-physikalischen Classe. Band 10, Abth. 2. 4to. München, 1868.

Sitzungsberichte. Jahrg. 1869, Band 1, Hft. 1–4, Band 2, Hft. 1–4, und Jahrg. 1870, Bd. 1, Heft. 1. 8vo. *Ibid.*, 1869–70. THE ACADEMY.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Nederlandsche Entomologische Vereeniging. v. **Leyden.**

Newcastle-on-Tyne.

Natural History Society of Northumberland and Durham.

Transactions. Vol. 3, Pt. 1. 8vo. London, 1869.

THE SOCIETY.

New York:—

American Museum of Natural History.

Annual Report 1st. 8vo. New York, 1870. THE MUSEUM.

Lyceum of Natural History.

Annals. Vol. 9, Nos. 1–4. 8vo. New York, 1868.

THE LYCEUM.

New Zealand:—See **Wellington.**

Norwich:—

Norfolk and Norwich Natural History Society.

Transactions, 1869–70. 8vo. Norwich, 1870.

THE SOCIETY?

Nova Scotian Institute.—See **Halifax.**.

Palermo:—

Istituto Tecnico. Consiglio di Perfezionamento.

Giornale di Scienze Naturali ed Economiche. Vol. 5, fasc. 1–4. Pte 1, Scienze Naturali. 4to. Palermo, 1869.

THE INSTITUTE.

Paris:—

Laboratoire Centrale de Sériculture. See **Guérin,** *F. E.*

Société Botanique de France.

Bulletin, Tome 15, Comptes Rendus des Séances, No. 2, Tables, & Session Extraordinaire, 1868; Tome 16, Comptes Rendus, Nos. 1–5, Revue Bibliographique, B–E, & Session Extraordinaire, 1869; Tome 17, Comptes Rendus, No. 1, & Rev. Bibl. A. 8vo. Paris, 1868–70.

THE SOCIETY.

Paris:—

Société Entomologique de France.

Annales. 4^{e} Série, Tome 9. 8vo. Paris, 1869.

THE SOCIETY.

Société Imp. et Centrale d'Horticulture.

Journal. 2^{e} Série, Tome 4. Mars et Avril, 1870. 8vo. Paris.

THE SOCIETY.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Petersburg :—

Académie Imp. des Sciences.

Mémoires, 7e Série, Tome 12, Nos. 4 & 5 ; Tome 13, Nos. 1-8, et Tome 14, Nos. 1-7. 4to. St. Pétersburg, 1868–69.

Bulletin, Tome 13, Nos. 4 & 5, & Tome 14, Nos. 1–3, 4to. *Ibid.*, 1869. THE ACADEMY.

Societas Entomologica Rossica.

Horæ, Tom. 6, No. 3. 8vo. Petropoli, 1869. THE SOCIETY.

Philadelphia :—

Academy of Natural Sciences.

Journal, New Series, Vol. 6, Pts. 3 & 4, & Vol. 7. 4to. Philadelphia, 1869.

Proceedings, Nos. 1–6 for 1868, and Nos. 1 & 2 for 1869. 8vo. *Ibid.*, 1868–69.

American Journal of Conchology, Vol. 5, Pts. 1 & 2. (Published by the Conchological Section of the Academy.) 8vo. *Ibid.*, 1869–70. THE ACADEMY.

American Entomological Society.

Transactions, Vol. 2, Nos. 1 & 2: 8vo. Philadelphia, 1867–68. THE SOCIETY.

American Philosophical Society.

Transactions, New Series, Vol. 13, Pt. 3. 4to. Philadelphia, 1869.

Proceedings, Vol. 10, Nos. 78, 79, & 81. 8vo. *Ibid.*, 1867–69. THE SOCIETY.

Plymouth :—

Plymouth Institution, and Devon and Cornwall Natural History Society.

Annual Report and Transactions, Vol. 3, Pt. 2. 8vo. Plymouth, 1869. THE INSTITUTION.

Portland (Maine) :—

Society of Natural History.

Proceedings, Vol. 1, Pts. 1 & 2. 8vo. Portland, 1862–69. THE SOCIETY.

Regensburg :—

Kön. Bayerische Botanische Gesellschaft.

Flora. Neue Reihe. Jahrg. 27, Nos. 14–34, und Jahrg. 28, Nos. 1–4 & 8–11. 8vo. Regensburg, 1869–70. PURCHASED.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Salem, Mass.:—

Essex Institute.

Proceedings, Vol. 5, Nos. 7 & 8. 8vo. Salem, 1868.
THE INSTITUTE.

Peabody Academy of Sciences.

Memoirs, Vol. 1, No. 1. 4to. Salem, Mass., 1869.

American Naturalist: edited by A. S. Packard, &c. Vol. 2 Nos. 4–12. 8vo. *Ibid.*, 1869. THE ACADEMY.

Shropshire:—

Caradoc Field Club.

Transactions in 1868. (12mo). Shrewsbury, 1869.
G. BENTHAM, ESQ. PRES. L.S.

Stockholm:—

Kongl. Svenska Vetenskaps-Akademien.

Handlingar. Ny Följd., Bandet 5, Häftet 2, Bd. 6, Hft. 1 & 2, and Bd. 7, Hft. 1 (for 1864–67). 4to. Stockholm, 1866–68.

Öfversigt af. K. Vet. Akad. Förhandlingar. Årgång. 22–25. 8vo. *Ibid.*, 1866–69.

Lefnadsteckningar öfver K. S. V. A., efter år 1854 aflidna Ledamöter. Bd. 1, Hft. 1. 8vo. *Ibid.*, 1869, and

Ledamöter, 1866–1869. 8vo. THE ACADEMY.

[Separate works issued by the Academy. See **Fries, Lindström, Linnarsson, Lovén, Stal,** and **Sundevall.**]

Strasburg:—

Société des Sciences Naturelles.

Mémoires. Tome 6, Livr. 2. 4to. Strasbourg, 1870.

Bulletin, Année 1, Nos. 1–11, & 2, Nos. 1–7. 8vo. *Ibid.*, 1868–69. THE SOCIETY.

Switzerland:—

Allgemeine Schweitzerische Gesellschaft für die gesammten Naturwissenschaften.

Neue Denkschriften (=Nouveaux Mémoires). Bd. 23. 4to. Zurich, 1869. NATURFORSCHE GESELLSCHT, BASEL.

Sydney:—

Entomological Society of New South Wales.

Transactions, Vol. 2, Part 1. 8vo. Sydney, 1869.
THE SOCIETY.

TITLES. DONORS.

ACADEMIES AND SOCIETIES (*continued*).

Tasmania :—

Royal Society.

Monthly Notices of Papers and Proceediugs for 1866 & 67. 8vo. Hobart Town, 1868.

Report of the Society for the year 1866. 8vo. *Ibid.*, 1867.

THE SOCIETY.

Toronto :—

Canadian Institute.

Canadian Journal of Science, Literature, and History. New Series, No. 69–71. 8vo. Toronto, 1869–70.

THE INSTITUTE.

Turin :—

R. Accademia delle Scienze.

Atti, Vol. 4 (1868–69), Disp. 1–7. 8vo. Torino, 1869.

Bolletino Meteorologico ed Astronomico del R. Observatorio. Anno 3. obl. 4to. *Ibid.*, 1868. THE ACADEMY.

[Sep. publ. See **Gorresio, G.**]

Venice :—

R. Istituto Veneto di Scienze, Lettere, ed Arti.

Memorie, Vol. 14, Pte. 1 & 2. 4to. Venezia, 1868–69.

Atti. Serie 3, Tomo 12, Dispensa 10, Tomo 13 (Disp. 1–10), e Tomo 14, Disp. 1–5. 8vo. *Ibid.*, 1866–69.

THE INSTITUTE.

Vienna :—

Kaiserl. Akademie der Wissenschaften. Math. Nat. Classe.

Sitzungsberichte. Abth. I., Band 57, Hft. 4 & 5, Bd. 58, & Bd. 59, Hft. 1 & 2; und Abth. II., Bd. 57, Hft. 4 & 5, Bd. 58, & Bd. 59, Heft. 1–3. 8vo. Wien, 1868–69.

Anzeiger, Jahrg. 6, Nos. 12–28, und Jahrg. 7, Nos. 1–12. 8vo. (*Ibid.*), 1869–70. THE ACADEMY.

K. K. Geologische Reichs-Anstalt.

Jahrbuch, Band 19, Nos. 1, 3, & 4. 8vo. Wien, 1869.

Verhandlungen, Jahrg. 1869, Nos. 1–5 & 10–18. 8vo. *Ibid.* THE INSTITUTE.

K. K. Zoologisch-Botanische Gesellschaft.

Verhandlungen. Band 19. 8vo. Wien, 1869. THE SOCIETY.

[Separate publications. See **Frauenfeld,** *G. von*, & **Hasskarl,** *C.*]

Titles.	Donors.

Academies and Societies (*continued*).

Warwick :—

Warkwickshire Natural History and Archæological Society.
Annual Report (33rd). 8vo. Warwick, 1869. The Society.

Washington :—

National Academy of Sciences.
Reports for 1866 & 1867. 8vo. 1867–68.
Smithsonian Institution.

Smithsonian Institution.
Annual Report of the Board of Regents for 1867. 8vo. Washington, 1868. The Institution.

Wellington, N. Z. :—

New Zealand Institute.
Transactions and Proceedings. Vol. 1 : edited . . . . by James Hector M.D., F.R.S. 8vo. Wellington, 1869.
W. L. Buller, Esq., F.L.S.

Woolhope :—

Naturalists' Field Club.
Transactions for 1868. 8vo. Hereford, 1869.
G. Bentham, Esq., Pres. L.S.

Würzburg :—

Physikalisch-Medicinische Gesellschaft.
Verhandlungen. Neue Folge. Bd. 1, Hft. 4. 8vo. Würzburg, 1869.
Verzeichniss der Bibliothek der Phys.-Med. Gesellschaft. 8vo. *Ibid.*, 1869. The Society.

Zürich :—

Naturforschende Gesellschaft.
Vierteljahrsschrift, Jahrg. 3, Hft. 3 & 4, Jahrg. 5, 12, und 13. 8vo. Zürich, 1858–68. The Society.

Journals :—

Annales Botanices Systematicæ. See **Walpers.**
Annales des Sciences Naturelles. 5^{e} Série. Botanique, Tome 10, Nos. 1–6. 8vo. Paris, 1869. Purchased.
Annals and Magazine of Natural History. 4th Series, Nos. 19–30. 8vo. London 1869–70. Dr. Francis, F.L.S.

TITLES. DONORS.

Journals *(continued)* :—

Archiv für Mikroskopische Anatomie; herausgegeben von Prof. Max Schultze. Bd. 5, Hft. 1–4. 8vo. Bonn, 1869. PURCHASED.

Archiv für Naturgeschichte; gegründet von A. F. A. Wiegmann; fortgesetzt von W. F. Erichson &c. Jahrg. 33, Hft. 6, J. 34, Hft. 5, J. 35, Hft. 1, 3, & 4, und J. 36, Hft. 1. 8vo. Berlin, 1867–70. PURCHASED.

Athenæum. Parts 498–509. (=Nos. 2171–2222). 4to. London, 1869–70. THE PUBLISHERS.

Botanical Magazine. 3rd Series: conducted by J. D. Hooker, M.D., F.R.S., L.S. &c. Nos. 295–306. 8vo. London. 1869–70. PURCHASED.

Botanische Zeitung. Redaction, Hugo von Mohl und A. de Bary. Jahrg. 26, No. 49, Jahrg. 27, Nos. 22–52, und Jahrg. 28, Nos. 1–24. 4to. Leipzig, 1868–70. PURCHASED.

Canadian Journal of Science &c. See ACADEMIES. **Toronto.**

Canadian Naturalist and Geologist. See ACAD. **Montreal.**

English Botany. See **Smith, *J. E.***

Entomologist's Annual for 1870. 12mo. London, 1870. H. T. STAINTON, Esq., F.R.S., Sec. L.S.

Entomologist's Monthly Magazine; conducted by H. G. Knaggs, M.D., R. M'Lachlan, Esq., &c. Nos. 62–73. 8vo. London, 1869–70. THE EDITORS.

Flora. See ACADEMIES. **Regensburg.**

Gardeners' Chronicle and Agricultural Gazette. Nos. 25–52 for 1869, and Nos. 1–22 for 1870. 4to. London. PURCHASED.

Geological Magazine: edited by Henry Woodward, F.G.S., &c. Vol. 6, Nos. 7–12, and Vol. 7, Nos. 1–6. 8vo. London, 1869–70. THE EDITOR.

Ibis; a Quarterly Journal of Ornithology. New Series: edited by Alfred Newton, M.A., F.L.S. &c. Nos. 19–21. 8vo. London, 1869–70. PURCHASED.

Illustration Horticole; Journal spécial des Serres, &c.: rédigé par Ch. Lemaire, Tome 16, Livr. 5–12. 8vo. Gand, 1869. M. A. VERSCHAFFELT.

Jahrbücher für wissenschaftliche Botanik: herausgegeben von Dr. N. Pringsheim. Band 7, Hft 1–3. 8vo. Leipzig, 1869. PURCHASED.

Titles.	Donors.

Journals (*continued*).

Journal de Conchyliologie; publié sous la direction de MM. Crosse et Fischer. 3e Série, Tome 9, Nos. 3 & 4, and Tome 10, Nos. 1 & 2. 8vo. Paris, 1869–70. — Purchased.

Journal of Botany, British and Foreign: edited by Berthold Seemann, Ph.D., F.L.S. &c., assisted by J. G. Baker, F.L.S., and H. Trimen, M.B., F.L.S. &c. Nos. 77–90. 8vo. London, 1869–70. — Purchased.

Linnæa: ein Journal für die Botanik: herausgegeben von Dr. Aug. Garcke. Neue Folge, Bd. 2, Hft. 1–3. 8vo. Berlin, 1869–70. — Purchased.

Malakozoologische Blätter; als Fortsetzung der Zeitschrift für Malakozoologie; herausgegeben von Dr. Louis Pfeiffer. Bd. 16, Bogen 6–12. 8vo. Cassel, 1869. — Purchased.

Monthly Microscopical Journal. See Academies &c. **London,** R. Microscopical Society.

Nature: a weekly illustrated Journal of Science. Nos. 1–32. 8vo. London, 1869–70. — The Publisher.

Nuovo Giornale Botanico Italiano. Vol. 1, Nos. 2–4, and Vol. 2, Nos. 1 & 2. 8vo. Firenze, 1869–70. — The Editor, Sign. O. Beccari.

Pharmaceutical Journal. See Academies &c. **London,** Pharmaceutical Society.

Philosophical Magazine and Journal of Science. 4th Series, Nos. 252–63. 8vo. London, 1869–70. — Dr. Francis, F.L.S. &c.

Popular Science Review: edited by Henry Lawson, M.D. Nos. 32–35. 8vo. London, 1869–70. — The Publisher, Robert Hardwicke, Esq., F.L.S.

Scientific Opinion. Nos. 62–84. 4to. London, 1870. — The Publisher.

Tijdschrift voor Entomologie. See Academies &c. **Leyden.**

Zeitschrift für wissenschaftliche Zoologie: herausgegeben von C. T. von Siebold und Albert Kölliker. Bd. 19, Hft. 2–4, und Bd. 20, Hft. 1–3. 8vo. Leipzig, 1869–70. — Purchased.

Zoologist: edited by Edward Newman, F.L.S. 2nd Series, Nos. 46–57. 8vo. London, 1869–70. — Purchased.

TITLES. DONORS.

Agardh, *J. G.* De Laminariis. (Lunds Univ. Arsskrift, tom. 4.) 4to.

——. Bidrag till kännedomen af Spetsbergens Alger. (Kongl. Sv. Vet.-Akad. Handl., Bd. 7.) 4to. Stockholm, 1868.

——. Om den Spetsbergska Drif-vedens Ursprung. (Öfversigt af K. V. Akad. Förhandl., 1869.) 8vo. THE AUTHOR.

Agassiz, *Louis.* Report upon Deep Sea Dredgings. (Bull. Mus. Comp. Zool. &c., Cambr., Mass., No. 13.) 8vo. Cambridge, Mass. (1869).

——. Address delivered on the Centennial Anniversary of the Birth of A. von Humboldt, under the auspices of the Boston Soc. Nat. Hist. 8vo. Boston, 1869. THE AUTHOR?

Babington, *C. C.* British Rubi: an attempt to discriminate the species of Rubus known to inhabit the British Isles. 12mo. London, 1869. THE AUTHOR.

Baillon, *H.* Histoire des Plantes, Tome 1 (Nos. 1–6) and Tome 2, Nos. 7–10. 8vo. Paris, 1867–70. PURCHASED.

Baily, *W. H.* Figures of characteristic British Fossils; with descriptive remarks. Pt. 2. 8vo. London, 1869. THE AUTHOR.

Beccari, *O.*, Ed. See **Journals,** Nuovo Giorn. Bot. Ital.

Bidie, *George.* Report on the ravages of the Borer in Coffee Estates. 8vo. Madras, 1869. THE AUTHOR.

Blytt, *A.* Om Vegetationsforholdene ved Sognefjorden. 8vo. Christiania, 1869.

THE R. NORWEGIAN UNIVERSITY AT CHRISTIANIA.

Bocquillon, *H.* Revue du groupe des Verbénacées. 8vo. Paris, 1861–63.

——. Anatomie et Physiologie des Organes Reproducteurs des Champignons et des Lichens. 4to. *Ibid.*, 1869. THE AUTHOR.

Bommer, *J. E.* Les Platanes et leur culture. 8vo. Bruxelles, 1869. THE AUTHOR.

Bory de St. Vincent, Cosson, *E.*, **Durieu de Maisonneuve, Montagne,** &c. Exploration Scientifique de l'Algérie. Sciences Naturelles. Liv. 18–20. 4to. Paris, 1854–67. PURCHASED.

Braubach, *Wilhelm.* Religion, Moral, und Philosophie der Darwin'schen Artlehre, &c. 8vo. Neuwied und Liepzig, 1869.

C. DARWIN, Esq., F.R.S. & L.S.

Brightwell, *Thomas.* Memorials of the life of. 12mo. Norwich, 1869. MISS BRIGHTWELL.

TITLES. DONORS.

Brown, *Robert.* On the geographical distribution of the Coniferæ and Gnetaceæ. (Trans. Bot. Soc., vol. 10.) 8vo. Edinburgh, 1869. THE AUTHOR.

Cleghorn, *Hugh.* Address delivered at the opening of the Botanical Society of Edinburgh, Session 1869–70. 8vo. Edinburgh, 1870.

——. Notes on the Botany and Agriculture of Malta and Sicily. (Trans. Bot. Soc., vol. 10.) 8vo. *Ibid.*, 1870. THE AUTHOR.

Collins, *James.* On India-rubber; its history, commerce, and supply. (Journ. Soc. Arts, Dec. 1869.) THE AUTHOR.

Crombie, *Rev. James M.* The Geological relations of the Alpine Flora of Great Britain. (Read before the Geologists' Association of London.) 8vo. Lewes.

——. Lichenes Britannici: seu Lichenum in Anglia, Scotia, et Hibernia vigentium enumeratio, cum eorum stationibus et distributione. 8vo. Londini, 1870. THE AUTHOR.

Dalzell, *N. A.* See ACAD., **India,** Forest Reports, Bombay.

De Candolle, *Alphonse*, Ed. Prodromus Systematis Naturalis Regni Vegetabilis. Pars 16, Sectio prior. 8vo. Parisiis, 1869.

PURCHASED.

De la Sagra, *Ramon.* Description et Culture de l'Ortie de la Chine; précédées d'une notice sur les diverses plantes qui portent ce nom. 12mo. Paris (1869). THE AUTHOR.

Delpino, *Federico.* Note critiche sull' opera "La distribuzione dei Sessi nelle piante," &c., del Prof. Federico Hildebrand. 8vo. Milano, 1867.

——. Sulla Darwiniana teoria della Pangenesi. 8vo. Torino, 1869.

——. Ulteriori osservazioni sulla Dicogamia nel Regno Vegetale. Parte 1ma. 8vo. Milano, 1868–69.

——. Pensieri sulla Biologia Vegetale, sulla Tassonomia, . . . e proposta di un genere nuovo delle Labiate. (Estr. dal Nuovo Cimento, vol. 25.) 8vo. Pisa, 1867.

——. Sugli apparecchi della Fecondazione nelle piante Antocarpee (Fanerogame). 8vo. Firenze, 1867.

——. Alcuni Appunti di Geografia Botanica e proposito delle tabelle Fitogeografiche del Prof. Hoffmann. (Boll. Soc. Geogr. Ital., fasc. 3.) 8vo. (Firenze, 1869.)

——. Breve Cenno sulle Relazioni Biologiche e Genealogiche delle Marantacee. (Nuovo Giorn. Bot. Ital., vol. 1, no. 4.) 8vo. Firenze, 1869. THE AUTHOR.

TITLES. DONORS.

Duncan, *P. M.* See ACADEMIES, &c., **London.** Palæontogr. Soc.

Ernst, *A.* Amadeo Bonpland. Apuntos Biographicos leidos en la Sesion de 22 de Noviembre de 1869, de la Sociedad de Ciencias Fisicas y Naturales de Caracas. 8vo. Caracas, 1869.
THE AUTHOR.

[**Falconer,** *R. W.*] Contributions towards a Catalogue of Plants indigenous to the neighbourhood of Tenby. 8vo. London, 1848. T. B. FLOWER, Esq., F.L.S.

Fischer, *F. E. L.*, **Meyer,** *C. A.*, and **Regel,** *E.* Sertum Petropolitanum: s. Icones et Descriptiones Plantarum quæ in Horto Botanico Imp. Petropolitano floruerunt. Decades 1–4, fol. Petropoli, 1846–69.
E. R. DE TRAUTVETTER, ON THE PART OF THE GARDEN.

Flower, *T. B.* Flora of Wiltshire, No. 12. 8vo. (Devizes.)
THE AUTHOR.

Folin, *L., Marquis de.* D'une Méthode de Classification de la famille des Chemnitzidæ. 8vo. Angers, 1870. THE AUTHOR.

Frauenfeld, *Georg, Ritter von.* Beiträge zur Fauna von der Nicobaren, III. (Verh. d. K. K. Zool. Bot. Gesellsch.) 1869. 8vo.

——. Zoologische Miscellen, No. 16. (*Ibid.*) 1869. 8vo.

——. Ueber einige Pflanzenverwüster des Jahres 1869. (*Ibid.*) 1869. 8vo.

——. Ueber den Artnamen von Aphanopteryx. (*Ibid.*) 1869. 8vo. THE ZOOL.-BOT. SOCIETY, VIENNA.

Fries, *El.* Sveriges ätliga och giftiga Svampar. Hft. 7–10. fol. (Stockholm) 1869? ACADEMY OF SCIENCES, STOCKHOLM.

Galton, *J. C.* Myology of Cyclothurus didactylus. (Ann. Nat. Hist., Oct. 1869.) THE AUTHOR.

Gorresio, *Gaspare.* Sunti dei lavori scientifici letti e discussi nella Classe di Scienze Morali, Storiche, e Filologiche della R. Acad. delle Scienze dal 1859–1865. 8vo. Torino, 1868.
THE ACADEMY.

Grote, *A. R.*, & **Robinson,** *C. T.* List of the Lepidoptera of North America. 8vo. Philadelphia, 1868.
THE ENTOMOLOGICAL SOCIETY OF PHILADELPHIA.

Guérin-Méneville, *F. E.* Revue de Sériciculture comparée. Journal Agricole, formant les Annales du Laboratoire Cen-

TITLES. DONORS.

tral de Sériciculture, des Sociétés Agricoles de France, &c., for 1863–65, and Nos. 1–9 for 1866. 8vo. Paris, 1863–66.

Capt. LENDY, F.L.S.

Günther, *A. C. L. G.* Record of Zoological Literature, Vol. 5. 8vo. London, 1869. PURCHASED.

Hanbury, *Daniel.* Historical Notes on Manure. (Reprinted from the Pharmaceut. Journ. for Dec. 1869, with additions.) 8vo.

THE AUTHOR.

Harris, *T. W.* Entomological Correspondence of. See ACADEMIES &c. **Boston,** Soc. Nat. Hist. (Occl. Papers).

Hasskarl, *Carol.* Commelynaceæ Indicæ: imprimis Archipelagi Indici. 8vo. Vindobonæ, 1870.

THE ZOOL. BOT. SOC., VIENNA.

Hayden, *F. V.* On the Geology of the Tertiary Formations of Dakota and Nebraska. See Journ. Acad. Nat. Sci. Philad., 2nd Series, Vol. 7.

Heller, *Karl B.* Darwin und der Darwinismus. 8vo. Wien, 1869. C. DARWIN, Esq., F.R. & L.SS.

Herder, *F. von.* Reisen in den Süden von Ost-Sibirien; im Auftrage der Kais. Russ. Geographischen Gesellschaft ausgeführt, in 1855–59, durch G. Radde. Botanische Abth., Monopetalæ, bearbeitet von F. v. H. (=Plantæ Raddeanæ, Monopetalæ.) Bd. 3, Hft. 2 & 3. 8vo. Moskau, 1867–69. M. REGEL.

Hoffmann, *Hermann.* Mykologische Berichte. Uebersicht der neuesten Arbeiten auf dem Gebiete der Pilzkunde. 8vo. Giessen, 1870. THE AUTHOR?

Hogg, *Jabez.* Microspectroscopy. Results of Spectrum-Analysis. (M. Microsc. Journ. 1869.) 8vo. THE AUTHOR.

Hooker's Icones Plantarum. 3rd Series. Vol. 1, Pt. 3: edited by J. D. Hooker, M.D., F.R.S., &c. 8vo. London, 1870.

G. BENTHAM, Esq., Pres. L. S.

Hooker, *J. D.* The Student's Flora of the British Islands. 12mo. London, 1870. THE AUTHOR.

Huxley, *Thomas.* Address delivered at the Anniversary Meeting of the Geological Society, Feb. 19, 1869. 8vo. London, 1869.

THE SOCIETY.

Jaeger, *G.* Die Darwin'sche Theorie, und ihre Stellung zu Moral und Religion. 8vo. Stuttgart (1869).

CHAS. DARWIN, Esq., F.R. & L.SS.

Jeffreys, *J. G.*, **Norman,** *Rev. A. M.*, &c. Last Report on

TITLES. DONORS.

Dredging among the Shetland Isles. (Report of the Brit. Assoc. for 1868.) 8vo. J. G. JEFFREYS, Esq., F.L.S.

Jenyns, *Rev. Leonard.* Address at the opening Meeting of the Bath Natural History and Antiquarian Field Club, Jan. 12th, 1870. 8vo. Bath. THE AUTHOR.

Krempelhuber, *A. von.* Geschichte und Litteratur der Lichenologie von den ältesten Zeiten bis zum Schlusse des J. 1865. Band 2. 8vo. München, 1869. PURCHASED.

Kurz, *S.* On Pandanophyllum and allied genera, chiefly those occurring in the Indian Archipelago. (Journ. Asiat. Soc. Beng., vol. 38.) 8vo. 1869.

——. Report on the vegetation of the Andaman Islands (accompanied by a Report on the Forests, and a Map). Fcap. fol. Calcutta, 1870. THE AUTHOR?

Labranos, *Christoph.* Στοιχεια Βοτανικης. 8vo. Κερκυρα, 1853.

Lankester, *E. R.* See ACADEMIES &c. Palæont. Soc.

Lartet, *E.*, & **Christy,** *H.* Reliquiæ Aquitanicæ. Pt. 10: edited by T. R. Jones, Esq. 4to. London, 1870.

THE EXORS. OF MR. CHRISTY.

Lea, *Isaac.* Notes on Microscopic Crystals included in some minerals. (Proc. Acad. Nat. Sc. Philad., 1869.) 8vo. THE AUTHOR?

Lecoq, *H.*, & **Lamotte,** *M.* Catalogue raisonné des plantes Vasculaires du Plateau Central de la France. 8vo. Paris, 1848.

D. HANBURY, Esq., F.L.S.

Leidy, *Jos.* Extinct Mammalian Fauna of Dakota and Nebraska. See ACADEMIES &c. **Philadelphia,** Journ. Acad. Nat. Sc. New Ser., Vol. 7.

Lettsom, *J. C.* Natural History of the Tea-tree. New Edition. 4to. London, 1799. D. HANBURY, Esq., F.R. & L.SS.

Lindstr¨m, *G.* Om Gotlands Nutida Mollusker. 8vo. Wisby, 1868. ACADEMY OF SCIENCES, STOCKHOLM.

Linnarssen, *J. G. O.* On some Fossils found in the Eophyton Sandstone, at Lugnås, in Sweden. (Translated from the Öfversigt.) 8vo. Stockholm, 1869. ACADEMY OF SCIENCES, STOCKHOLM.

Lombardini, *Luigi.* Ricerche intorno alla genesi delle forme organiche irregolari negli Uccelli e ne' Batrachidi. 8vo. Pisa, 1868. C. DARWIN, Esq., F.R. & L.SS.

Lovén, *S.* Om en märklig i Nordsjön lefvande Art af *Spongia.* (K. Vet. Ac. Förhandl., Årg. 25.) 8vo. 1868.

ACADEMY OF SCIENCES, STOCKHOLM.

TITLES. DONORS.

Lowe, *E. J.* Natural Phenomena and Chronology of the Seasons. Part. 1. 8vo. London, 1870. THE AUTHOR.

Lowne, *B. T.* Anatomy and Physiology of the Blow-fly (*Musca vomitoria*, L.). 8vo. London, 1870. THE AUTHOR.

Mantegazza, *Paolo.* Degli innesti animali e della produzione artificiale delle cellule. 8vo. Milano, 1865.
C. DARWIN, Esq., F.R. & L.SS.

Martius, *C. F. Ph. de,* & **Eichler,** *Aug. Gul.* Flora Brasiliensis. Fasc. 47 & 48. Fol. Lipsiæ, 1869. PURCHASED.

Masters, *M. T.* Vegetable Teratology: an account of the principal deviations from the usual construction of Plants. 8vo. London, 1869. THE AUTHOR.

Meigen, *J. W.* Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten. Th. 1–7. 8vo. Halle & Hamm, 1822–38.

——. Th. 8. Supplement. "Beschreibungen europäischer Dipteren," bearbeitet von Hermann Loew. Bd. 1. 8vo. Halle, 1869. PURCHASED.

Meissner, *C. F.* Denkschrift auf C. F. Ph. von Martius. 4to. München, 1869. THE ACADEMY OF SCIENCES, MUNICH.

Miers, *John.* Contributions to Botany, iconographic and descriptive. Vol. 2. 4to. London, 1860–69. THE AUTHOR.

Miquel, *F. A. G.* Annales Musei Botanici Lugduno-Batavi. Tom. 4, fasc. 6–10. Fol. Amstelodami, 1869.

——. Catalogus Musei Botanici Lugduno-Batavi. Pars 1ma. Flora Japonica. 8vo. Hagæ-Comitis, 1870.
THE UNIVERSITY OF LEYDEN.

Moore, *Charles.* Sketch of the vegetation of Lord Howe's Island, New South Wales. Fcap. fol. 1 sheet. (Sydney) 1869.
THE AUTHOR.

Müller, *Ferdinand von.* Fragmenta Phytographiæ Australiæ. Vol. 5 (fasc. 31–40), Vol. 6 (fasc. 41–49), and Vol. 7 (fasc. 50–52). 8vo (c. tabb. 35–60). Melbourne, 1865–9.
THE AUTHOR.

Newman, *Edward.* Illustrated Natural History of British Moths (concluding No.). 8vo. London, 1869. THE AUTHOR.

Notaris. Briologia Italiana. See ACAD. **Genoa,** University.

Oliver, *Daniel.* First Book of Indian Botany. 8vo. London, 1869. THE AUTHOR.

Owen, *Richard.* See ACADEMIES, **London,** Palæontogr. Soc.

TITLES. DONORS.

Parlatore, *Filippo.* Flora Italiana, Vol. 2, pte. 1, Vol. 3, pte. 1 & 2, & Vol. 4, pte. 1 & 2. 8vo. Firenze, 1852–69. PURCHASED.

Phillips, *John.* See ACAD., **London,** Palæontogr. Soc.

Planchon, *J. E.* See **Vialla,** *L.*

Poeppig, *Ed.,* & **Endlicher,** *St.* Nova Genera ac Species Plantarum. Tomus 3. Fol. Lipsiæ, 1845. PURCHASED.

Pourtales, *L. F.* Contributions to the Fauna of the Gulf Stream, &c. See ACAD., **Cambridge, Mass.,** Bull. of Mus. Comp. Anat., Nos. 6 & 7.

Powrie, *James.* See ACAD. **London,** Palæontogr. Soc.

Pringsheim, *N.,* Jahrbücher. See **Journals.**

Quadri, *Achille.* Note alla Teoria Darwiniana. 8vo. Bologna, 1869. C. DARWIN, Esq., F.R. & L.SS.

Reeve, *Lovell.* Conchologia Iconica. Pts. 280–83. 4to. London, 1869–70. PURCHASED.

Regel, *E.,* & **Herder,** *F. ab.* Enumeratio Plantarum in regionibus Cis- et Trans-iliensibus, a cl. Seminovio, anno 1857, collectarum (contin. 4 & 5). 8vo. Mosquæ, 1869. M. REGEL.

Robinson, *W.* Alpine Flowers for English Gardens. 8vo. London, 1870. THE AUTHOR.

Saunders, *W. W.,* Ed. Refugium Botanicum, Vol. 2, pt. 1, and Vol. 3, pts. 1 & 2. 8vo. London, 1869–70. THE EDITOR.

Schacht, *Herm.* The Microscope, and its application to Vegetable Anatomy and Physiology. Edited by F. Currey, Esq., M.A. 2nd edition. 12mo. London, 1855. F. CURREY, Esq., F.R.S., Sec. L.S.

Schimper, *W. Ph.* Synopsis Muscorum Europæorum : præmissa introductione de Elementis Bryologicis tractante. 8vo. Stuttgartiæ, 1860. PURCHASED.

——. Traité de Paléontologie Végétale. Tome 2, Partie 1. 8vo. Paris, 1870.

——. Atlas. 3^{e} livr. (pts. 54–75). 4to. *Ibid.,* 1870. THE AUTHOR.

Schultze, *Max.* Archiv f. Mikrosk. Anat. See **Journals.**

Seubert, *Maurit.* Flora Azorica ; quam ex schedis Hochstetteri (patr. et fil.) elaboravit. 4to. Bonnæ, 1844. PURCHASED.

Smith, *Cecil.* The Birds of Somersetshire. 12mo. London, 1869. THE AUTHOR.

Smith, *J. E.,* & **Sowerby,** *James.* English Botany. 3rd edition, by J. T. B. Syme, Mrs. Lankester, &c. Nos. 71–77. 8vo. London, 1869–70. THE PUBLISHER, R. HARDWICKE, Esq., F.L.S.

TITLES. DONORS.

Sowerby, *G. B.* Thesaurus Conchyliorum, Parts 26–8. 8vo. London, 1870. PURCHASED.

Sprengel, *C. K.* Das entdeckte Geheimniss der Natur im Bau und in der Befruchtung der Blumen. 4to. Berlin, 1793. PURCHASED.

Stainton, *H. T.* Tineina of Southern Europe. 8vo. London, 1869. THE AUTHOR.

Stål, *Carolus.* Hemiptera Africana. Tomi 1–4. 8vo. Holmiæ, 1864–6. ACADEMY OF SCIENCES, STOCKHOLM.

Sundevall, *Carl J.* Die Thierarten des Aristoteles, von den Classen der Säugethiere, Vögel, Reptilien, und Insekten (Uebersetzung aus dem Schwedischen). 8vo. Stockholm, 1863.

——. Conspectus Avium Picinarum. 8vo. Stockholmiæ, 1866. ACADEMY OF SCIENCES, STOCKHOLM.

Tate, *George.* The Geology, Botany, and Zoology of the neighbourhood of Alnwick. 8vo. Alnwick, 1869. THE AUTHOR.

Tournefort, *J. P.* Institutiones Rei Herbariæ. Ed. 2. Tomi 3. 4to. Paris, 1700. D. HANBURY, Esq., F.R.S. & L.S.

Trimen, *Henry,* & **Dyer,** *W. T. T.* Flora of Middlesex. 8vo. London, 1869. THE PUBLISHER, R. HARDWICKE, Esq., F.L.S.

Van Horen, *François.* Observations sur la physiologie des Lemnacées. 8vo. Gand, 1869. C. DARWIN, Esq., F.R. & L.SS.

Vialla, *L.*, **Planchon,** *J. E.*, & **Lichtenstein,** *L.*

1. Rapport de la Commission pour étudier la nouvelle maladie de la Vigne;
2. Notes Entomologiques sur la Phylloxera vastatrix. 8vo. Montpellier, 1869. M. LICHTENSTEIN.

Vogel, *Aug.* Ueber die Entwicklung der Agriculturchemie. 4to. *Ibid.*, 1869. THE ACADEMY OF SCIENCES, MUNICH.

Walpers. Annales Botanices Systematicæ. Tom. 7, fasc. 4. Auct. Dr. Carl Müller. 8vo. Lipsiæ, 1869. PURCHASED.

Warren, *Hon. J. L.* On the Dumetorum group of Rubi, in Britain. (From Journ. of Bot., May and June, 1870.) 8vo. THE AUTHOR?

Wiegmann. Archiv f. Naturgeschichte. See **Journals.**

Wollaston, *T. R.* Coleoptera Atlantidum: being an enumeration of the Coleopterous Insects of the Madeiras, Salvages, and Canaries. 8vo. London, 1865.

——. Coleoptera Hesperidum: an enumeration of the Coleo-

	TITLES.	DONORS.
	pterous Insects of the Cape Verde Archipelago. 8vo. *Ibid.*, 1867.	PURCHASED.
Woolls,	*William.* The progress of Botanical Discovery in Australia: a lecture delivered ... at Paramatta, July 13, 1869. 12mo. Sydney, 1869.	THE AUTHOR.
Zanardini,	*G.* Iconographia Phycologica Mediterraneo-Adriatica. Vol. 2, fasc. 5. 4to. Venezia, 1869.	PURCHASED.
Zawadzki,	*Alexander.* Enumeratio Plantarum Galiciæ et Bucowinæ. 8vo. Breslau, 1835.	PURCHASED.
Zuchold,	*Ern. Am.* Additamenta ad G. A. Pritzelii Thesaurum Literaturæ Botanicæ. Fasc. 2. 8vo. Lipsiæ, 1866.	PURCHASED.

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